QK
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1909
Bot.H-C

Charles Wright's stations in Cuba, taken from Underwood, Bull. Torrey Club 32: 291-300 (map) 1905.

Pinar del Río
Reunales
Jarela
Mantua
Coyoloicion
Luis Lazo
Herradura
Guane
Arroyo Hondo
Nombre de Dios

La Grifa
San José
Taco Taco
Santa Cruz
Los Organos
Rangel range
Retiro
Asiento viego (Lag)

Cajalbarra
Vuelta abajo
Guajaibon
Las Posas
Toscana
San Marco
Almacigos
Hato Juebiando

San Cristobal
Ingenio Esperanza
Langvanillas
Sagua La Machuca
Bajas
Daraniguan
La Concordia
{Valestino / Balestino}
D. Palacios

Habana
Guanajay

Pinar del Río

Matanzas
Bemba

Ingenio Fermina
Jovellanos
Mejia "3 leagues from Cienaga de Zapata"

Jauta
Palma Sola

Sta Clara
Santo Espiritu
Trinidad
Cienaga de Zapata

Cayo Bonito
La Fermina
~~Mejia "3 leagues from C. de Z."~~

Camagney
Puerto Principe

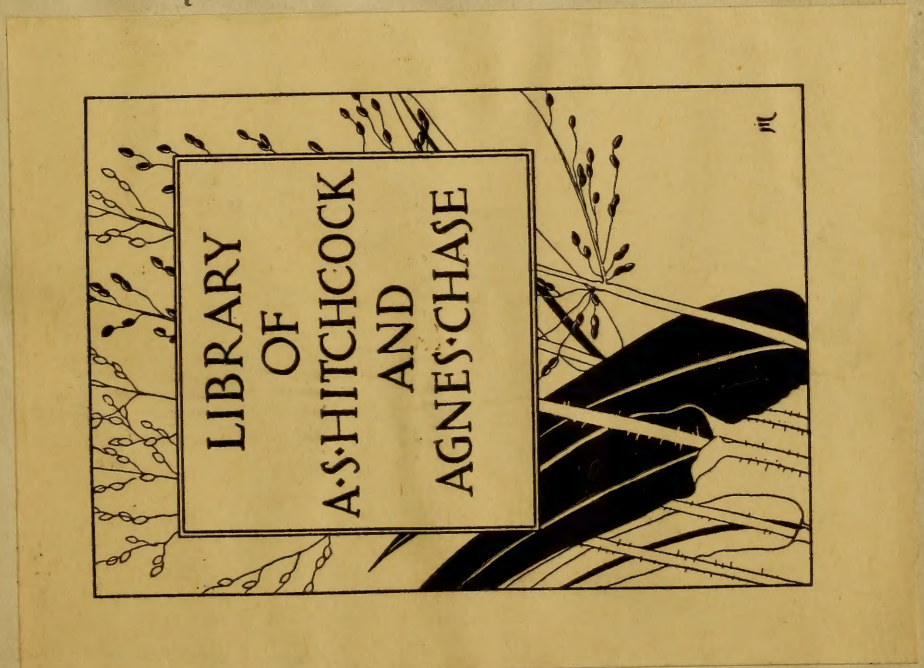
Santiago de Cuba
Las Tunas
Holguin
Barajagua
Mayari
La Catalina
Baracoa
Monte Verde = Yateras
Guantanamo
Josephina = Ramon
Cobre
Bayamo
Buena Vista
San Juan de "

El Yunque
Valparaiso
Santiago
La Guinea = {Ongoloxongo / Hongoloxonga
Filantropia = "
Nima-Nima & Loma del Gato
Saltadero back of Guantanamo Harbor
La Perla
Nouvelle Sophie = Las Yaguas
Farallones
La Madelinoa
Cayo del Rey
Hato del Medio
Potosi (in Mt. Toro
Monte Libano
Sagua de Tanamo
Mata or Mata Cafe

Yumuri or Yumurí a gorge in northern Cuba; misspelled "Toimary" and "Jumuri" from Rugel's writing. See Bull. Torr Club 39:12.1912

Hanábana is about 8 miles NE of Laguna del Tesoro, not far from the river Hanábana, at the southern limit between Matanzas + Santa Clara Provinces. Brother Leon's letter Apr 1914

Also letter of Bro. Léon May 17, 1928



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Bot.

A. S. Hitchcock
Jul. 90

SMITHSONIAN INSTITUTION
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12 m.c.

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FROM THE

UNITED STATES NATIONAL HERBARIUM

VOLUME XII, PART 6

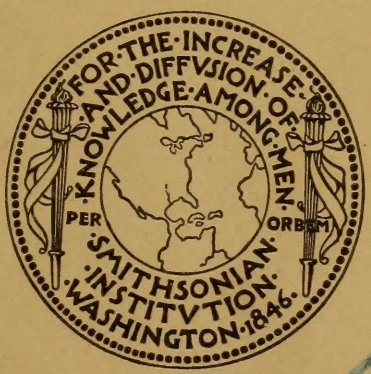
CATALOGUE

OF

THE GRASSES OF CUBA

Bert Pear

By A. S. HITCHCOCK



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II

PREFACE.

The accompanying paper by A. S. Hitchcock, Systematic Agrostologist of the United States Department of Agriculture, entitled Catalogue of the Grasses of Cuba, is the result of an exhaustive study of the material in the United States National Herbarium and in the herbarium of the Estación Central Agronómica de Cuba. It was chiefly through the efforts of Mr. Carl F. Baker, who obtained large collections in Cuba, that the specimens were made accessible to Mr. Hitchcock. It is hoped that this paper will be followed by similar ones upon other groups.

J. N. Rose,
Acting Curator.

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Grasses collected in Cuba by Wright, arranged by numbers	254
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CATALOGUE OF THE GRASSES OF CUBA.

By A. S. Hitchcock.

INTRODUCTION.

The following list of Cuban grasses is based primarily upon the collections at the Estación Central Agronómica de Cuba, situated at Santiago de las Vegas, a suburb of Habana. The herbarium includes the collections made by the members of the staff, particularly Mr. C. F. Baker, formerly head of the department of botany, and also the Sauvalle Herbarium deposited by the Habana Academy of Sciences. These specimens were examined by the writer during a short stay upon the island in the spring of 1906, and were later kindly loaned by the station authorities for a more critical study at Washington. The Sauvalle Herbarium contains a fairly complete set of the grasses collected by Charles Wright, the most important collection thus far obtained from Cuba. In addition to the collections at the Cuba Experiment Station, the National Herbarium furnished important material for study, including collections made by A. H. Curtiss, W. Palmer and J. H. Riley, A. Taylor (from the Isle of Pines), S. M. Tracy, Brother Leon (De la Salle College, Habana), and the writer.

The earlier collections of Wright were sent to Grisebach for study. These were reported upon by Grisebach in his work entitled "Catalogus Plantarum Cubensium," published in 1866, though preliminary reports appeared earlier in the two parts of Plantae Wrightianae.[a] During the spring of 1907 I had the opportunity of examining the grasses in the herbarium of Grisebach in Göttingen.[b] In the present article I have, with few exceptions, accounted for the grasses listed by Grisebach in his catalogue of Cuban plants, and have appended a list of these with references to the pages in the body of this article upon which the species are considered. The numbers upon the labels of the Wright specimens in the Grisebach Herbarium are in many cases not the same as those under which the species were afterwards distributed and under which they were listed in the catalogue. These numbers I have designated as secondary numbers. Grisebach has sometimes connected on his labels the secondary number by the sign

[a] Mem. Amer. Acad. n. ser. Vol. VIII. Part I, pp. 153 to 192, (as separate) 1860; Part II, pp. 503 to 536, (as separate) 1862. The grasses were included in Part II.

[b] Unless otherwise stated the writer has examined all the types mentioned in this paper.

of equality with the distribution number. The data upon the Grisebach labels are meager, usually consisting of the number and year, together with an abbreviation for eastern or western Cuba. The distribution numbers of the grasses reported upon by Grisebach are all below 3500. Wright, after his return from Cuba, studied his collections at the Gray Herbarium and published his results in a series of articles in conjunction with Doctor Sauvalle, of Cuba.[a] In the

[a] Anales de la Academia de Ciencias, Médicas, Físicas y Naturales de la Habana, Volumes V to IX, 1868 to 1872. This was reset and, an index being added, published in 1873 as Flora Cubana. The introduction to the first installment of the series (**5**: 196. 1868) is as follows: "Revisio Catalogi Grisebachiani vel index plantarum cubensium ad catalogum Cl. Grisebachii anno 1866 editum attemperata, pluribus Wrightianis novis speciebus aucta, valde quoque emendata, a cl. C. Wright; omnia pro Annalibus Regiae Academiae Scientiarum Havanensis digesta, nominibusque adjectis cubensibus vulgo receptis a Francisco A. Sauvalle. Setiembre, 1868." Each continuation is headed "Revisto Catalogi Grisebachiani vel Index Plantarum Cubensium; a Francisco A. Sauvalle." The reprint has a title page as follows: "Flora Cubana. | Enumeratio Nova Plantarum Cubensium | vel | Revisio Catalogi Grisebachiani, | Exhibens | Descriptiones Generum Specierumque | Novarum | Caroli Wright, (Cantabrigiae) et Francisci Sauvalle, | Synonymis | nominibusque vulgaribus Cubensis adjectis. | Auctore | Francisco A. Sauvalle, | Academiae Scientiarum Havanensis. | Havanae. | Imp. "La Antilla," de cacho-negrete, | Calle de Cuba num. 51. | 1873.

The Gramineae appeared in Vol. VIII, 1871. The article was entirely reset for the reprint, but a comparison of this portion of the original with the reprint shows very few errors. In the original the serial numbers of the Gramineae occur as follows:

Numbers.	Page.	Numbers.	Page.
2721 to 2727	157	2798 to 2800	205
2728 to 2755	158	2801 to 2812	206
2756 to 2764	200	2813 to 2828	207
2765 to 2769	201	2829 to 2855	208
2770 to 2780	202	2856 to 2869	209
2781 to 2791	203	2870 to 2878	287
2792 to 2797	204	2879 to 2891	288

In the reprint the numbers are as follows:

Numbers.	Page.	Numbers.	Page.
2721 to 2737	190	2799 to 2812	197
2738 to 2764	191	2813 to 2819	198
2765 to 2769	192	2820 to 2844	199
2770 to 2776	193	2845 to 2869	200
2777 to 2789	194	2870 to 2884	201
2790 to 2796	195	2885 to 2891	202
2797 to 2798	196		

present paper the new species published in Sauvalle's article are credited to Wright. The original set upon which Sauvalle's list is based is at the Gray Herbarium, and a fairly complete duplicate set is in the Sauvalle Herbarium.

The sets of Wright's plants were made up at the Gray Herbarium and given herbarium distribution numbers. Each number included such collections as were thought to be of the same species. Thus it often occurs that different specimens of the same distribution number may have been collected in different localities or may even belong to different species. The data found upon the field labels in various herbaria are mentioned under each species in the present list. There is also appended a list of the species of grasses included in Sauvalle's Flora Cubana, with references to their identification, and a list of the Wright numbers in sequence with their identification.

The plan followed in the present paper is to give under specimens cited a list of the specimens found in the herbarium of the Estación Central Agronómica, including the Sauvalle Herbarium, and in the National Herbarium, without statement as to the herbarium in which they are deposited. To these are added specimens found in the Gray Herbarium which do not occur in the herbaria just mentioned, and finally, specimens in the Herbarium of the New York Botanical Garden (Herb. N. Y. Bot. Gard.), including the herbarium of Columbia University, of which the Torrey Herbarium forms a part, which are not found in the others mentioned. The specimens collected by the staff of the botanical department of the Cuba Experiment Station are numbered in a single series and are indicated in this list by the letters HC (Herbarium Cubae). The data for the Wright specimens, given in the paragraph devoted to the enumeration of specimens, are understood to be found with the specimens in the Sauvalle Herbarium. Additional data, found with specimens in other herbaria, are quoted in the succeeding paragraph devoted to notes.

Grisebach enumerated 154 species of grasses in his catalogue. Sauvalle's Flora Cubana includes 170 species. The present list includes 228 species or well-marked subspecies.

KEY TO THE GENERA.[a]

Series Paniceae.—Spikelets 1-flowered, rarely 2-flowered; when 2-flowered the terminal floret perfect, the lower staminate or neutral (except in Isachne), no apparent internode between them; rachilla articulated below the glumes, the spikelets falling from the pedicels entire, singly, in groups, or together with joints of an articulate rachis; spikelets not laterally compressed (except in Lithachne).

Lemma and palea (the latter sometimes wanting in Andropogoneae) hyaline; glumes more or less indurated, the first largest; sterile lemma like fertile lemma in texture (except in Alloteropsis).

[a] In this key the tribal characters are given with reference to the Cuban genera only, and in some cases would not hold good for the entire tribe.

Staminate and pistillate spikelets in different inflorescences; pistillate spikelets inclosed in a bony bead-like involucre (MAYDEAE).....1. *Coix* (p. 190).
Spikelets all perfect, or unisexual and arranged in pairs, the pistillate sessile, the staminate pedicellate (or all pedicellate in Trachypogon). (ANDROPOGONEAE.)
Joints of the rachis much thickened and excavated to receive the spikelets.
First glume of the perfect spikelet flat or somewhat convex; perennials.
6. *Manisuris* (p. 191).
First glume of the perfect spikelet hemispherical, pitted; annual.
7. *Hackelochloa* (p. 191).
Joints of rachis not thickened nor excavated for the reception of the spikelets.
Spikelets all alike, perfect; inflorescence a plume-like panicle.
Axis of racemes continuous, not articulate; spikelets awnless.
2. *Imperata* (p. 190).
Axis of racemes articulated.
Spikelets awnless.....3. *Saccharum* (p. 190).
Spikelets awned.....4. *Erianthus* (p. 190).
Spikelets not alike.
All pedicellate; the perfect long-pedicellate, long-awned, the staminate short-pedicellate, awnless.....8. *Trachypogon* (p. 191).
Sessile and pedicellate, the former perfect, awned, the latter staminate, empty or wanting.
Perfect spikelets transversely rugose.....5. *Ischaemum* (p. 191).
Perfect spikelets not transversely rugose.
Sessile spikelets not all alike, the first to fifth pairs homogamous; awns 10 cm. long, stout; glumes bearing oil glands, lemon-scented when fresh.....13. *Heteropogon* (p. 196).
Sessile spikelets alike throughout.
Racemes of several to many joints, at least some of the racemes sessile.....9. *Andropogon* (p. 192).
Racemes reduced to 1 or 2 joints, all the racemes more or less pedunculate.
Pedicellate spikelets present, usually 2 to each sessile spikelet.....10. *Holcus* (p. 195).
Pedicellate spikelets wanting.
Awns not over 2 cm. long, delicate.
11. *Sorghastrum* (p. 195).
Awns over 10 cm. long, stout.
12. *Rhaphis* (p. 195).
Lemma and palea membranaceous or indurated; sterile lemma when present like the glumes in texture.
Lemma and palea membranaceous; axis of inflorescence not breaking up at maturity.
Spikelets 3 to 5 together, the clusters arranged in spikes, the glumes indurated. (ZOYSIEAE.)
Glumes covered with hooked spines.....14. *Nazia* (p. 196).
Glumes not spiny, united into a somewhat pitcher-shaped pseudo-involucre.....15. *Anthephora* (p. 196).
Spikelets distinct, paniculate. (TRISTEGINEAE.)
Fertile lemma awned; rather robust grasses....16. *Arundinella* (p. 196).
Fertile lemma awnless; low grass with tuft of involute rather wiry basal leaves [doubtfully placed in this tribe].....17. *Triscenia* (p. 198).
Lemma and palea cartilaginous or chartaceous-indurated, conspicuously different in texture from the membranaceous glumes, rarely but little indurated. (PANICEAE.)

Spikelets unisexual; plants monœcious; blades abruptly contracted into petiole-like bases.
Inflorescence consisting of 2 slender racemes, one staminate the other pistillate, digitate at the summit of a naked culm; leafy stems distinct from the base; plants low .....44. *Mniochloa* (p. 233).
Inflorescence borne on leafy culms; fruit bony-indurated.
Fruit dorsally compressed; panicles terminal on culms or leafy branches, pistillate spikelets above, staminate spikelets below in same panicle .....42. *Olyra* (p. 233).
Fruit laterally compressed, conspicuously gibbous on upper dorsum; panicles all axillary or axillary and terminal, the terminal when present wholly staminate .....43. *Lithachne* (p. 233).
Spikelets all perfect.
Spikelets 2 to 4 together sunken in the alternate notches of a broad, thickened rachis; creeping grasses .....41. *Stenotaphrum* (p. 232).
Spikelets not sunken in notches of a thickened rachis.
Spikelets solitary or in small clusters subtended by an involucre consisting of 1 to many bristles (sterile branches), these sometimes grown together.
Involucre persistent on the axis, spikelets deciduous.
36. *Chaetochloa* (p. 230).
Involucre deciduous with and attached to the spikelets.
Involucre a spiny bur inclosing 1 to 5 spikelets.
37. *Cenchrus* (p. 231).
Involucre of distinct bristles.
Involucre of a single sterile branch produced beyond each spikelet .....40. *Paratheria* (p. 232).
Involucre of numerous often plumose bristles.
38. *Pennisetum* (p. 232).
Spikelets not involucrate.
Fruits not rigid, margins of lemma not inrolled.
Inflorescence of slender racemes, divergently digitate at the summit of the culm, both glumes wanting.
18. *Reimarochloa* (p. 198).
Inflorescence paniculate.
Blades cordate-clasping, fruit open at summit; aquatic or semiaquatic grasses.....29. *Hymenachne* (p. 212).
Blades not cordate-clasping.
Spikelets awned, first glume with a pedicel-like callus.....39. *Chaetium* (p. 232).
Spikelets awnless; fruits cartilaginous-indurated, papillose, usually dark-colored, lemmas with thin, usually white margins.
Fruit open at the white-margined summit; spikelets tuberculate-hispid between the nerves.....21. *Leptocoryphium* (p. 207).
Fruit not open nor white-margined at summit.
Sterile lemma like the fertile lemma in texture .....26. *Alloteropsis* (p. 210).
Sterile lemma like the glumes in texture.
Spikelets clothed with long silky hairs.....25. *Valota* (p. 210).
Spikelets glabrous or pubescent only.
24. *Syntherisma* (p. 208).

Fruits indurated-rigid (or if thin not open at the summit nor hyaline-margined).

Spikelets placed with the back of the fruit turned away from the main axis.

First glume and rachilla joint forming a swollen ring-like callus; fruit mucronate or shortly awn-pointed. 22. *Eriochloa* (p. 207).

First glume present or wanting, not forming a ring-like callus; spikelets in slender racemes.

First glume as long as the spikelet or nearly so; spikelets swollen on the side toward the axis and fitting into alternate hollows; inflorescence a single raceme .....27. *Mesosetum* (p. 211).

First glume wanting or not over one-fourth the length of the spikelet.

Racemes racemose along the main axis; first glume present.....28. *Brachiaria* (p. 212).

Racemes digitate or subdigitate, first glume wanting.....20. *Axonopus* (p. 207).

Spikelets with the back of the fruit turned toward the main axis.

Spikelets plano-convex, subsessile in spike-like racemes, typically lacking the first glume (both glumes wanting in *P. pulchellum*). 19. *Paspalum* (p. 199).

Spikelets unequally biconvex; paniculate, or if racemose the first glume present.

Fertile florets 2.....23. *Isachne* (p. 208).

Fertile floret 1.

Glumes awnless.

Second glume broad and saccate, panicle contracted or spike-like. 30. *Sacciolepis* (p. 212).

Second glume not broad nor saccate.

Margins of lemma inrolled; no lateral appendages nor excavations at base of fruit.....32. *Panicum* (p. 214).

Margins of lemma not inrolled; either lateral appendages or excavations at base of fruit. 33. *Ichnanthus* (p. 228).

Glumes or one of them awned, or cuspidate.

Fruit cuspidate, palea free at the tip; second glume and sterile lemma tapering into an awn or cuspidate point. 31. *Echinochloa* (p. 213).

Fruit not cuspidate, palea not free; awns arising from a toothed summit.

Spikelets clothed with rose-colored silky hairs; first glume minute. 34. *Tricholaena* (p. 229).

Spikelets pubescent with short pale hairs, first glume nearly as long as the second.35. *Oplismenus* (p. 229).

SERIES POACEAE.—Spikelets 1 to many-flowered, the imperfect or rudimentary floret, if any, uppermost; rachilla articulated (except in Oryzeae) above the glumes, which are persistent on the pedicel or rachis after the fall of the florets; when 2 to many-flowered a manifest internode of the rachilla separating the florets and articulated below them; spikelets laterally compressed.

Spikelets articulated below the glumes. (ORYZEAE.)

Spikelets unisexual, plants monœcious.

Spikelets in pairs, one large, perfect, sessile, the other small, staminate, long-pediceled; the broad oblanceolate blades with transverse veins between the longitudinal nerves.....45. *Pharus* (p. 234).

Spikelets not in pairs, the staminate and pistillate in different panicles; blades linear, not cross-veined.....46. *Luziola* (p. 234).

Spikelets all perfect.

Glumes wanting, lemma awnless.....48. *Homalocenchrus* (p. 234).

Glumes present.

Glumes minute, awnless; lemma awned except in cultivated forms. 47. *Oryza* (p. 234).

Glumes about as long as the floret or longer, awned.

Glumes tapering into awns; spikelets, including awns, over 3 cm. long.....49. *Achlaena* (p. 235).

Glumes awned from the notched apex; spikelets, including awns, scarcely 1 cm. long.....50. *Reynaudia* (p. 235).

Spikelets articulated above the glumes.

Culms woody, perennial, at least at the base, leaf blades commonly articulated with and deciduous from the sheath. (BAMBUSEAE.) 66. *Arthrostylidium* (p. 245).

Culms herbaceous, annual, leaf blades not articulated with the sheath.

Inflorescence of 1-sided spikes or racemes, spikelets sessile or nearly so. (CHLORIDEAE.)

Plants diœcious or monœcious, the staminate awnless, pistillate with numerous awns; low stoloniferous grass.....60. *Opizia* (p. 242).

Plants not diœcious, spikelets all alike.

Spikelets with 1 perfect floret, sometimes 1 or more sterile florets above the perfect one.

No sterile florets, spikelets awnless, spikes slender, digitate. 54. *Capriola* (p. 238).

One or two sterile florets above the perfect one, spikelets generally awned.

Spikes digitate or approximate in apparent whorls at the summit of the culm.....55. *Chloris* (p. 238).

Spikes remote along the main axis..56. *Bouteloua* (p. 240).

Spikelets with 2 or 3 perfect florets.

Spikes alternate, more or less remote along the main axis, spikelets not crowded.....59. *Leptochloa* (p. 241).

Spikes digitate or nearly so, spikelets crowded.

Axis of spike not produced beyond the uppermost spikelet, glumes and lemmas not cuspidate...57. *Eleusine* (p. 241).

Axis of spike produced into a naked cuspidate point, glumes and lower lemmas cuspidate.58. *Dactyloctenium* (p. 241).

Inflorescence paniculate, sometimes contracted but spikelets never sessile in 1-sided spikes.

Spikelets 1-flowered. (AGROSTIDEAE.)

Lemma awnless.....53. *Sporobolus* (p. 237).

Lemma awned.
Lemma indurated, convolute, awn 3-fid (lateral awns minute or wanting in *A. scabra*) ..... 51. *Aristida* (p. 235).
Lemmas not indurated, tapering into a capillary awn. 52. *Muhlenbergia* (p. 237).
Spikelets 2 to many-flowered. (FESTUCEAE.)
Lemmas cleft above into a pappus-like crown of bristles. 61. *Pappophorum* (p. 242).
Lemmas entire.
Lemmas clothed with long silky hairs, tall, reed-like, dicœcious grasses ..... 62. *Gynerium* (p. 242).
Lemmas not clothed with silky hairs.
Lemmas 3-nerved, not at all indurated. 63. *Eragrostis* (p. 242).
Lemmas many-nerved, somewhat indurated and rigid.
Sterile lemmas 1 to 3 above the glumes; plants not dicœcious ..... 64. *Uniola* (p. 245).
Sterile lemmas above glumes none; plants dicœcious. 65. *Distichlis* (p. 245).

CATALOGUE OF GENERA AND SPECIES.

1. COIX L. Sp. Pl. 972. 1753.

1. Coix lachryma-jobi L. Sp. Pl. 972. 1753.

Pinar del Rio, *Baker & Abarca*, HC 3686; El Guama, *Palmer & Riley* 142.

This is originally from tropical Asia, but is now cultivated for ornament in the warmer regions of both hemispheres, whence it has escaped.

2. IMPERATA Ciril. Pl. Rar. Ic. **2:** 26. *pl. 11.* 1792.

1. Imperata brasiliensis Trin. Mem. Acad. Petersb. VI. **2:** 331. 1833.

La Magdalena, *Baker* HC 4946; Madruga, *Britton* 630; without locality, *Wright* 3486; Cienfuegos, *Combs* 701, in Gray Herbarium; Isle of Pines, *Curtiss* in 1904 in Herb. N. Y. Bot. Gard.; Pinar del Rio, *Shafer* 310 in Herb. N. Y. Bot. Gard.

The type in the Trinius Herbarium is from Serra da Lapa, Brazil, though Trinius in the original publication cites merely "V. spp. Brazil." *I. caudata* Trin., as shown by the type in the Trinius Herbarium, differs in having smaller spikelets (about 2.5 mm. long), longer and more copious hairs, and an elongated inflorescence. The spikelets of *I. brasiliensis* are 4 mm. long. Wright's specimen (3486) is the latter species as shown by the specimen in the herbarium of Grisebach and in that of Sauvalle. This is referred to *I. caudata* by Grisebach[a] and Sauvalle.[b]

3. SACCHARUM L. Sp. Pl. 54. 1753.

1. Saccharum officinarum L. Sp. Pl. 54. 1753.

Cienfuegos, *Pringle* 17; Guanajay, *Curtiss* 635.

This species (sugar cane) is grown in all tropical countries, and the above specimens are from cultivated plants.

4. ERIANTHUS Michx. Fl. Bor. Amer. **1:** 54. 1803.

1. Erianthus saccharoides Michx. Fl. Bor. Amer. **1:** 55. 1803.

Laguna San Mateo, Pinar del Rio, *Wright* 3903.

In Sauvalle's Flora Cubana this is called *Andropogon alopecuroides* L. The latter species, however, has a twisted awn, while in *E. saccharoides* the awn is straight or only slightly bent, not twisted.

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[a] Cat. Pl. Cub. 236. 1866.

[b] Anal. Acad. Cienc. Habana **8:** 288. 1871; Fl. Cub. 202.

5. ISCHAEMUM L. Sp. Pl. 1049. 1753.

1. **Ischaemum rugosum** Salisb. Icon. Stirp. Rar. 1791.
Madruga, *Curtiss* 533, "Wet ground beside railroad."
A native of southeastern Asia, introduced in Cuba.

6. MANISURIS L. Mant. Pl. 2: 164, 300. 1771.

Outer glume transversely wrinkled.....1. *M. loricata.*
Outer glume with three longitudinal furrows.....2. *M. impressa.*

1. **Manisuris loricata** (Trin.) Kuntze, Rev. Gen. Pl. 2: 780. 1891.
Rottboellia loricata Trin. Mem. Acad. Petersb. VI. 2: 250. 1833.
Rottboellia filifolia Wright, Anal. Acad. Cienc. Habana 8: 209. 1871; Fl. Cub. 200.
Herradura, *Baker* HC 2963, *Baker & Abarca* HC 4181, *Tracy* 9059, *Hitchcock* in 1906; Dayaniguas, *Wright* 3905.
Trinius's type specimen, which comes from Serra da Lapa, Brazil, has transversely rugose outer glumes, as in the Wright specimen.

2. **Manisuris impressa** (Griseb.) Kuntze, Rev. Gen. Pl. 2: 780. 1891.
Rottboellia impressa Griseb. Cat. Pl. Cub. 235. 1866.
El Salado, *Wright* 3904.
The type specimen in Grisebach's herbarium is accompanied by the printed blank label with the year 1865, but no locality. The label also bears the secondary number 201.
The specimen in the Sauvalle Herbarium is from El Salado and is numbered 3904. The Wright specimen in the National Herbarium is numbered 3904 upon an 1865 label like that of the type. These may be all of the same collection.

M. exaltata Kuntze Leon 8477

7. HACKELOCHLOA Kuntze, Rev. Gen. Pl. 2: 776. 1891.

1. **Hackelochloa granularis** (L.) Kuntze, Rev. Gen. Pl. 2: 776. 1891.
Cenchrus granularis L. Mant. 2: 575. 1771.
Manisuris granularis Sw. Prod. 25. 1788.
Punta Brava, *Baker* HC 4047; Madruga, *Shafer* 22, 65; Isle of Pines, *Palmer & Riley* 1084, 1092, *Curtiss* 493; Habana, *Leon* 213; La Magdalena, *Baker* 6; without locality, *Wright* 1553 in 1865; Herradura, *Tracy* 9100, 9101.
The Grisebach specimen is *Wright* 1553, collected in eastern Cuba, 1859. Wright's 1553 in the Gray Herbarium is from "open grassy places at Saltadera, Sept. 11."

8. TRACHYPOGON Nees, Agrost. Bras. 341. 1829.

Awn appressed-pubescent.....1. *T. filifolius.*
Awn strongly plumose.....2. *T. gouini.*

1. **Trachypogon filifolius** (Hack.)
Trachypogon polymorphus β filifolius Hack. in DC. Mon. Phan. 6: 325. 1889.
In small tufts in pebbly pinales,[a] October, Pinar del Rio, *Wright* 3893; in large tufts, low damp pinales,[a] Pinar del Rio, *Wright* 3892; Herradura, *Baker* HC 2155.
This species is characterized by the elongated, closely convolute blades, the single racemes, and the erect awn 4 cm. long, short-pilose below, and by being glabrous throughout, except the slightly barbed nodes. Culm 100 to 150 cm. tall.

2. **Trachypogon gouini** Fourn. Mex. Pl. 2: 66. 1886.
Torteleza de la Cabana, *Baker & Van Hermann* HC without number; San Francisco de Paula near Habana, *Leon* 209; Habana, *Leon* 300; Triscornia, *Tracy* 9086.
Awn 7 to 8 cm. long, very plumose to the tip.

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[a] Pine woods.

Arthropogon stipitatus Hack. Sitzb. Acad. Wien. 89: 125. 1884
"In insula Cuba leg. Ramond de la Sagra (Specimen unicum vidi in herb. reg. Berolinensi.)"

9. ANDROPOGON L. Sp. Pl. 1045. 1753.

Racemes numerous in a leafless terminal panicle ..... 7. *A. leucopogon.*
Racemes 1 to 4, solitary or fascicled from spathes.
  Racemes solitary.
    Spikelets awnless ..... 11. *A. spathiflorus.*
    Spikelets awned.
      Outer glume of sterile spikelet conspicuous and bract-like ..... 4. *A. fastigiatus.*
      Outer glume not conspicuous.
        Plants annual; racemes delicate ..... 2. *A. brevifolius.*
        Plants perennial; racemes not delicate.
          Racemes cylindrical, stiff and spike-like.
            Sterile pedicel ciliate its entire length; spikelets 5 to 6 mm. long ..... 10. *A. semiberbis.*
            Sterile pedicel ciliate only at apex; spikelets 4 mm. long ..... 12. *A. tener.*
          Racemes zigzag, axis lax and slender; spikelets about 3 mm. long.
            Racemes conspicuously villous ..... 6. *A. gracilis.*
            Racemes sparsely villous, spikelets about 6 mm. long ..... 3. *A. cubensis.*
  Racemes 2 to 4 from each spathe.
    Spathes numerous in a large corymb.
      Spikelets awnless ..... 1. *A. bicornis.*
      Spikelets long-awned ..... 5. *A. glomeratus.*
    Spathes scattered or the inflorescence naked and terminal.
      Racemes shorter than the spathe ..... 13. *A. virginicus.*
      Racemes naked, terminal.
        Spikelets awned ..... 9. *A. nashianus.*
        Spikelets awnless ..... 8. *A. leucostachys.*

1. Andropogon bicornis L. Sp. Pl. 1046. 1753.

Arroyo Galiano, *O'Donovan* HC 5217; Santiago de las Vegas, *Wilson* 439; Pinar del Rio, *Palmer & Riley* 86; Isle of Pines, *Curtiss* 294; Retiro, in Savannas, *Wright* 3902; El Guama, *Palmer & Riley* 95; Nueva Gerona, *Palmer & Riley* 1125; without locality (1865) *Wright* 1555; Herradura, *Hitchcock* in 1906; Cienfuegos, *Combs* 265 in Gray Herbarium; Madruga, *Britton & Shafer* 773 in Herb. N. Y. Bot. Gard.

Wright's 770 from eastern Cuba (1859) is *A. bicornis* as shown by the specimen in Grisebach's herbarium.

Wright's 1555 as distributed consists in part of *Andropogon bicornis* and in part of *A. glomeratus*. The latter is distinguished by the long-awned spikelets.

2. Andropogon brevifolius Sw. Prod. 26. 1788.

Madruga, *Curtiss* 530; without locality, *Wright* 1558; Herradura, *Hitchcock* in 1906.

The Wright specimen in the National Herbarium bears a blank label of 1865. No. 1558 in the Grisebach Herbarium is from eastern Cuba, 1859, but the plant is *A. tener* (there has probably been some misplacement of labels here). In the latter herbarium is a specimen from western Cuba, 1863, with the secondary number 925, upon which Grisebach has marked "=1558." One sheet of *Wright* 1558 in the Gray Herbarium is *A. tener*, the other *A. brevifolius*, from "Pinales San Diego de Baños, Nov. 16."

3. Andropogon cubensis Hack. Flora **68:** 121. 1885.

Without locality, *Wright* 3898.

This number was not seen by Grisebach, but is listed in Sauvalle's Flora Cubana without specific name.

4. **Andropogon fastigiatus** Sw. Prod. 26. 1788.

Dry savannas October 26. *Wright* 3483.

No. 3483 of Wright, 1865, is accompanied by two supplementary labels, "Savannas, San Cristobal, Nov.," and "Culms few or single, sandy pine woods, Pinar del Rio, Dec." The Grisebach specimen of this is from "Cub. occ. 1863" and bears the secondary number "921=3483." No. 3485 [error for 3483?] in the Gray Herbarium was collected by Wright in 1860–64 in "sandy pine woods, Asiento Viejo, Los Remales, Dec. 2."

5. **Andropogon glomeratus** (Walt.) B.S.P. Prel. Cat. N. Y. 67. 1888.

Cinna glomerata Walt. Fl. Car. 59. 1788.

Andropogon macrourum Michx. Fl. Bor. Amer. **1**: 56. 1803.

Hanabana, *Wright* 1555; Isle of Pines, *Curtiss* 294, *Taylor* 18 in Herb. N. Y. Bot. Gard.; Batabano, *Shafer* 224; Habana, *Schott* 103; Guanabacoa, *Leon* 565, 572; Santiago de las Vegas, *Wilson* 2207 in Herb. N. Y. Bot. Gard.; Matanzas, *Britton & Wilson* 83, 94 in Herb. N. Y. Bot. Gard.; Maraguana, *Wilson* 7553 in Herb. N. Y. Bot. Gard.

Wright's 1555 in the National Herbarium is *A. bicornis*. The specimen in the Grisebach Herbarium with this number is *A. glomeratus*, but it is from eastern Cuba, collected in 1859. In the Gray Herbarium one sheet of *Wright* 1555 (1859) is *A. glomeratus*, another (1865) is *A. bicornis*.

6. **Andropogon gracilis** Spreng. Syst. **1**: 284. 1825.

Schizachyrium gracile Nash in Small, Fl. Southeast. U. S. 60. 1903.

Wright 3484 [3480 in Sauv. Fl. Cub.] without data. Isle of Pines, *Curtiss* 380, *Taylor* 17; Buena Vista, *Shafer* in 1903; Herradura, *Baker & Dimmock* HC 4829, *Tracy* 9067; Candelaria, *Earle & Wilson* HC 1637; Calvario, *Leon* 562.

Wright's 3484 in the Grisebach Herbarium has a blank label of 1860–64, but is without other data. The Wright specimen of this species in the National Herbarium has a blank label of 1865, with the number 204 and also a tag in Wright's handwriting, "Pine woods, Cagalbana, Apr. 17." Wright's 1557, in the Grisebach Herbarium, "Cub. or." in 1859, is also *A. gracilis*. This species was described under *Andropogon scoparius* Michx. in Sagra's History of Cuba.[a]

7. **Andropogon leucopogon** Nees, Linnaea **19**: 694. 1847.

Isle of Pines, *Curtiss* 382; *Wright* 1556 in Grisebach Herbarium.

In the Grisebach Herbarium and in the Gray Herbarium *Wright* 1556 is labeled as collected in eastern Cuba in 1859. Curtiss's specimen was distributed under an unpublished name. ~~Leon 893~~

8. **Andropogon leucostachys** H.B.K. Nov. Gen. & Sp. **1**: 187. 1816.

Andropogon domingensis Roem. & Schult. Syst. **2**: 809. 1817.

Isle of Pines, *Curtiss* 314, *Taylor* 16; Madruga, *Baker* HC 3458; Herradura, *Earle* HC 3111, *Tracy* 9046, Consolacion del Sur, *Palmer & Riley* 480; bushy savannas, Hanabana, May 17, *Wright* 3900.

Grisebach's specimen of this has an 1865 label with the secondary number 202.

9. **Andropogon nasnianus** sp. nov.

Culms solitary or few in a cluster, simple, slender, erect, glabrous, 30 to 45 cm. high, nodes glabrous; sheaths glabrous or sparsely pilose toward the summit, much shorter than the elongated internodes, broader at the summit than the base of the

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[a] Rich. in Sagra, Hist. Cub. **11**: 320. 1850. The types of the grasses described by Richard in this work are at the Museum d'Histoire Naturelle at Paris. The types of Panicum were examined by the writer in the spring of 1907. Fragments from the types of five other species were later sent to the National Herbarium through the kindness of Director Le Comte.

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blade thus forming more or less of a shoulder; blades narrow, folded, appressed, glabrous, 1 to 4 cm. long, 1 mm. wide, the basal as much as 10 cm. long, the uppermost reduced to points 1 to 3 mm. long; inflorescence at the summit of the naked culm, the peduncle long-exserted from the uppermost sheath; racemes in pairs 3 to 4 cm. long, very villous with tawny hairs 5 to 7 mm. long from the rachis and the sterile pedicel; sessile spikelets 3 to 4 mm. long, as long as or slightly longer than the internodes of the rachis; first glume nerveless between the scabrous keels, second glume slightly shorter than the first, sterile and fertile lemmas hyaline, slightly shorter than the second glume, the fertile lemma bearing an awn which extends 10 to 15 mm. beyond the spikelet; stamen 1; sterile pedicel 3 mm. long, bearing an involute scale 1 to 2 mm. long.

Type, Cuba, *Wright* 3899, no. 35320 in U. S. National Herbarium.

Sandy pine woods, western Cuba. In addition to the type this species is represented by: Herradura, *Hitchcock* in 1906, *Tracy* 9069.

The specimen of *Wright* 3899 in the Sauvalle Herbarium is labeled "Sandy pine woods, Pinar del Rio. Sept. Culms few or single, scattering."

This species is named for Mr. George V. Nash, who, while studying the species of Andropogon in the National Herbarium, suggested that the above-mentioned specimens did not belong to *A. leucostachys*, to which they had been referred. The species is allied to *A. leucostachys* H. B. K. and *A. subtenuis* Nash.

a. pertusus panamitanus (Parl.) Hack. Leon 8936.

10. **Andropogon semiberbis** (Nees) Kunth, Enum. 1: 489. 1833.

Schizachyrium semiberbe Nees, Agrost. Bras. 336. 1829.

Wright 3891 (in 1865). Habana, Leon 1956, 15-29.

11. **Andropogon spathiflorus** (Nees) Kunth, Enum. 1: 496. 1833.

Hypogynium spathiflorum Nees, Agrost. Bras. 366. 1829.

Anatherum spathiflorum Griseb. Cat. Pl. Cub. 236. 1866.

Wright 3481; Herradura, *Baker & Dimmock* HC 4814; Isle of Pines, *Curtiss* 460, *Taylor* 23.

The Sauvalle specimen has two labels, "Savannas Dayaniguas Sept." and "Pinales, Dayaniguas Sept." Another sheet has a blank label, "3480 *Anatherum inerme* Gris." In the Grisebach Herbarium are two sheets of this, one marked 3481 on an 1860–64 label, and another marked "899=3481, Cub. occ. 1863." The specimen in the National Herbarium with the number 3481 has this on an 1865 label.

In the Grisebach Herbarium there are two other sheets of this species, marked *Anatherum inerme* Griseb., "3480 Cuba 1860–64," and "898=3480, Cub. occ. 1863." I have not seen the type of *Anatherum inerme* (Steud.) Griseb.[a] (*Andropogon inermis* Steud.)[b], which is from Venezuela, but Hackel places it under *Andropogon spathiflorus* as variety *inermis*.[c] I do not see that Wright's 3480 differs from 3481. Nees's type at Munich is the same. One sheet of this species in the Gray Herbarium is marked "3480=3481" and is from "pinales (wet), Los Almacigos, July 29;" another from the same locality is marked "3481=3480."

12. **Andropogon tener** (Nees) Kunth, Rev. Gram. 2: 565. 1832.

Schizachyrium tenerum Nees, Agrost. Bras. 336. 1829.

Wright 3482; Herradura, *Tracy* 9065.

Grisebach's specimen is labeled "Cub. occ. 1863" and is numbered "914=3482." The Wright specimen in the National Herbarium has an 1865 label. Wright's 3482 in the Gray Herbarium is from "savannas, Almacigos, July 25." One sheet of Wright's 1558 in the Gray Herbarium is this species, the other is *A. brevifolius*.

13. **Andropogon virginicus** L. Sp. Pl. 1046. 1753.

Wright 3901; Santiago de las Vegas, *Baker & Wilson* HC 599; Guanabacoa, *Leon* 193.

The Sauvalle specimen has no data. The Wright specimen in the National Herbarium bears an 1865 label.

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[a] Cat. Pl. Cub. 236. 1866.

[b] Syn. Pl. Glum. 1: 390. 1854.

[c] Mart. Fl. Bras. 2[3]: 296. 1883.

A. agrostoides Spreng. León 895 = Sorghastrum

a. squarrosus L. f. - Habana Leon 15-81

a. canescens ? - Guanabacoa Leon 2013

10. **HOLCUS** L. Sp. Pl. 1047. 1753.[a]

1. Holcus halepensis L. Sp. Pl. 2: 1047. 1753.

Andropogon halepensis Brot. Fl. Lusit. 1: 89. 1804.

Sorghum halepense Pers. Syn. 1: 101. 1805.

Habana, *Curtiss* 561, *Leon* 271; Santiago de las Vegas, *Baker* HC 503, *Hitchcock* in 1906; Guanajay, *Palmer & Riley* 664, 815; without data, *Wright* 3488; Vedado, *Leon* 424.

Wright's 3488 in the Grisebach Herbarium bears the data, "Cub. or. 1860–64, fields near Matanzas."

11. **SORGHASTRUM** Nash in Britton, Man. 71. 1901.[b]

Awn 10 to 15 mm. long.....1. *S. francavillanum.*
Awn not over 2 mm. long.....2. *S. setosum.*

1. Sorghastrum francavillanum (Fourn.). = *S. bipinnatum*

Andropogon francavillanus Fourn. Mex. Pl. 2: 56. 1886.

Pinar del Rio, *Wright* 3896; Herradura, *Baker* HC 2179.

The Sauvalle specimen has two labels, "Sandy pine woods Oct.," and "Low savannas and pinales Sept." The Wright specimen in the National Herbarium has an 1865 label. This species has a loose panicle, with slender branches; the spikelets are about 5 mm. long, light brown, sparsely pilose on the lower half; the pedicel of the upper spikelet about 4 mm. long, awn 10 to 15 mm. long, once, or more or less twice, geniculate; blades long and folded or convolute, about 3 mm. wide. I have not seen Fournier's type of this, but his description applies to the Cuban plant.

2. Sorghastrum setosum (Griseb.).

Andropogon setosus Griseb. Cat. Pl. Cub. 235. 1866.

Wright 3897.

The specimen in Grisebach's herbarium, which is the type, has a blank label of 1865 and bears the secondary number 208. The Sauvalle Herbarium contains a specimen accompanied by a similar label with no. "208" and a second of the same kind, with no. "3897" and also a label with habitat, "Bushy savannas, Hanabana, June 1." This is a duplicate type. Wright's 3897 in the Gray Herbarium is from "Bushy savannas, Hanabana, June 6."

The inflorescence is comparatively dense; the spikelets smaller than in the preceding, only about 3 to 3.5 mm. long, long-pilose all over; pedicel of the upper spikelet 2 to 3 mm. long; awn none or short and exserted 1 to 2 mm.; blades flat, 5 mm. wide, about 15 cm. long.

12. **RHAPHIS** Lour. Fl. Cochinch. 552. 1790.

1. Rhaphis pauciflora (Chapm.) Nash in Small, Fl. Southeast. U. S. 67. 1903.

Sorghum pauciflorum Chapm. Bot. Gaz. 3: 20. 1878.

Sandy pine woods, Pinar del Rio, *Wright* 3895; Isle of Pines, *Taylor* 46.

This is listed in Sauvalle's Flora Cubana as "*Andropogon* (*Chrysopogon*) *wrightii* Munro," but is without description. Under this are mentioned nos. 293 and 263.

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[a] *Holcus sorghum* L. must be considered the type of the genus Holcus since it is the most important economic species of the genus and further, since, in the fifth edition of his Genera Plantarum, Linnæus refers to the genus Sorgum Mich [eli] as a synonym of Holcus.

[b] Poranthera Raf. (Ser. Bull. Bot. 1: 221. 1830) has for its type *Andropogon nutans* L., but the name was previously used for a genus of Euphorbiaceae (Rudge, Trans. Linn. Soc. 10: 302. 1811). The type species of Sorghastrum Nash is *Andropogon avenaceum* Michx., which is the same as *A. nutans* L.

The latter I have not seen. Wright's 293 is in the Gray Herbarium, labeled as above, with the herbarium name of Munro.

13. HETEROPOGON Pers. Syn. 2: 533. 1807.

1. **Heteropogon contortus** (L.) Roem. & Schult. Syst. 2: 836. 1817.
Andropogon contortus L. Sp. Pl. 2: 1045. 1753.
Andropogon secundus Willd.; Nees, Agrost. Bras. 364. 1829, in note.
Eastern Cuba, *Wright* 1559.

This specimen is in the Grisebach Herbarium and is listed in Grisebach's catalogue of Cuba plants as *Andropogon* (*Heteropogon*) *secundus*. (*Heteropogon secundus* Presl is a species of Trachypogon.) Sauvalle lists no. 1559 as *Andropogon contortus*, but there is no specimen of this number in the Sauvalle Herbarium. One is found, however, in the Gray Herbarium.

14. NAZIA Adans. Fam. Pl. 2: 31, 581. 1763.

1. **Nazia aliena** (Spreng.) Scribn. U. S. Dept. Agr. Div. Agrost. Bull. 17: 28. 1899.
Lappago aliena Spreng. Neue Entd. 3: 15. 1822.
Wright 3489, without data.

The Grisebach specimen was collected "1860–64." This is listed in Sauvalle's Flora Cubana as *Lappago racemosa*.

15. ANTHEPHORA Schreb. Beschr. Gräs. 2: 105. *pl. 44.* 1810.

1. **Anthephora hermaphrodita** (L.) Kuntze, Rev. Gen. Pl. 2: 759. 1891.
Tripsacum hermaphroditum L. Syst. ed. 10, 2: 1261. 1759.
Anthephora elegans Schreb. Beschr. Gräs. 2: 105. 1810.

In sand along the shore La Palma Sola, Aug. 7, *Wright* 3890; Santiago de las Vegas, *Van Hermann* HC 2694, *Hitchcock* in 1906; Herradura, *Baker* HC 2691; La Magdalena, *Baker* HC 3634; Cienfuegos, *Combs* 257 in Gray Herbarium.

This is listed in Sauvalle's Flora Cubana as 3870. The Sauvalle specimen is marked 3890, as is the specimen in the National Herbarium. The former specimen is accompanied by a second label with the secondary number 308, which is the only number with the Grisebach specimen.

16. ARUNDINELLA Raddi, Agrost. Bras. 37. *pl. 1. f. 3.* 1823.

Awn bent, tightly twisted below.....2. *A. martinicensis.*
Awn bent, but not tightly twisted.
Blades flat, over 1 cm. wide; panicle dense, 30 cm. or more long.....1. *A. deppeana.*
Blades more or less folded, less than 1 cm. wide; panicle loose, not elongated.....3. *A. peruviana.*

1. **Arundinella deppeana** Nees, Bonplandia 3: 84. 1855.
Arundinella phragmitoides Griseb. Cat. Pl. Cub. 234. 1866.

Wright 3479; Madruga, *Curtiss* 662, *Britton & Shafer* 647 in Herb. N. Y. Bot. Gard.; Pinar del Rio, *Palmer & Riley* 70; *Shafer* 304 in Herb. N. Y. Bot. Gard.; without locality, *Otto* 268.

Grisebach's specimen is from western Cuba in 1863 and is numbered "933=3479." I have not seen Nees's type, "*Seemann* n. 428, Panama." Nees describes the awn as 6 lines long, strongly geniculate in the middle and not twisted. This can only apply to *A. phragmitoides* and to *A. peruviana*. Nees further states that the leaves are smooth and one-half inch wide, and the panicle over a foot long and 4 inches thick. This applies best to *A. phragmitoides*, though the blades are usually more or less pilose. Specimens in the National Herbarium are as follows: Mexico: *Lieb-*

mann 629, 630; *Langlassé* 608; *C. T. Smith* 1892; *Botteri* 730, 731, 734; *Palmer* 1264, 1920. Guatemala: *Heyde & Lux* 3907; *Maxon & Hay* 3526; *Rock* in 1887; World's Fair Commission in 1893. Salvador: *Renson* 207. Costa Rica: *Tonduz* 9211.

2. **Arundinella martinicensis** Trin. Gram. Pan. 62. 1826.
Arundinella pallida Nees, Agrost. Bras. 465. 1829.
Thysanachne scoparia Presl, Rel. Haenk. 253. 1830.
Wright 3478.

The Grisebach specimen is from eastern Cuba in 1860 and numbered "113=3478." Wright's 3478 in the Gray Herbarium is from San Juan de Buenavista, Nov. 21. These were compared with the type of Nees at Munich and that of Trinius at St. Petersburg (from Martinique, *Sieber* 262). This species has an elongated dense panicle, more or less folded blades, the bent awn twisted below. It ranges from Cuba and Mexico to Brazil, and is represented in the National Herbarium by the following: Porto Rico: *Heller* 934, 4355, 6256; *Sintenis* 361, 5797; *Barrett* 101. Santo Domingo: *Wright, Parry & Brummel* 626. Jamaica: *Eggers* 3514. Mexico: *Palmer* 434. Costa Rica: *Pittier* 11005; *Tonduz* 3672. Brazil: *Glaziou* 17433; *Regnell* 1414 (III).

Thysanachne scoparia Presl was published in the Symbolae Botanicae, the title page date of which is 1832 and which, hence, is later than the Reliquiae Haenkeanae. But the part containing the above species must have been published earlier, for in the latter work[a] is cited "*T. scoparia.* Presl de thysanachne, 1829. cum icone." There appears to be no such work by Presl except the portion of the Symbolae (pages 11 and 12 and pl. 6) where Thysanachne and *T. scoparia* are described as if they were there originally published. The species is based on *Sieber* 264 from Martinique. Presl's type from Mexico was examined at Prague.

Pilger[b] refers the Porto Rico species to *A. hispida* (Willd.) Kuntze (*Andropogon hispidus* Willd.), to which he also refers *A. brasiliensis* Raddi. I have not seen the type of either of the last two species, but in Trinius's herbarium is the type of *Goldbachia mikani* Trin., which is included by Pilger in the list of synonyms of *A. hispida.* This I consider distinct from *A. pallida,* as did Nees,[c] and it is what I take to be *A. brasiliensis* Raddi. This is also the *A. brasiliensis* of Hackel in Martius's Flora Brasiliensis, as indicated by plate 38 and by specimens so named received from Professor Hackel. The spikelets are smaller and the awn shorter, sometimes scarcely exserted. This species is represented in the National Herbarium by the following: Mexico: *Liebmann* 622, 635. Colombia: *Pittier* 1527. British Guiana: Mount Roraima Exped. 254. Brazil: *Glaziou* 17921, 20567 a; *Henschen* in 1868, *Dusén* 3875. Uruguay: *Arechavaleta.*

3. **Arundinella peruviana** (Presl) Steud. Syn. Pl. Glum. **1:** 115. 1854.
Thysanachne peruviana Presl, Rel. Haenk. 253. 1830.
Arundinella cubensis Griseb. Mem. Amer. Acad. n. ser. **8:** 533. 1862.[d]
Arundinella crinita Trin. Linnaea **10:** 299. 1836.
Wright 1552.

Sheaths and blades pilose, the latter narrow and more or less folded, usually less than 0.5 cm. wide; panicle rather loose, not elongated as in *A. martinicensis;* awn slender and bowed back like a shepherd's crook, but not twisted. The type of *A. cubensis* from eastern Cuba, no. 1552 in 1859, is in the Grisebach Herbarium. Another specimen also from eastern Cuba, 1860, is numbered "115=1552."

The types above cited, namely, those of Presl at Prague, Grisebach at Göttingen, and Trinius at St. Petersburg, agree with each other and are well characterized by the shape of the awn. Additional specimens in the National Herbarium are as follows: Mexico: *Liebmann* 621, 625, 632, 634; *Bourgeau* 1660, 2223; *Palmer* 12, 526,

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[a] Rel. Haenk. 253.
[b] In Urb. Symb. Antill. **4:** 80. 1903.
[c] Agrost. Bras. 465. 1829.
[d] Pl. Wright. 2.

652; *Pringle* 3133. Guatemala: *Cook & Griggs* 691. Costa Rica: *Pittier* 2407, 11246; *Biolley* 7469; *Tonduz* 4867. Brazil: Commis. Geogr. S. Paulo 2800.

In the collection of Haenke at the herbarium of the German University at Prague there are, under *Thysanachne peruviana*, two specimens. One is accompanied by the label, "Peruan. mont. guanoc. Hanke." This specimen corresponds to Presl's description of this species and agrees with a duplicate in the Bernhardi Herbarium at the Missouri Botanical Garden figured by Scribner.[a] The other specimen is *A. martinicensis* Trin.

17. TRISCENIA Griseb. Mem. Amer. Acad. n. ser. 8: 534. 1862.

1. **Triscenia ovina** Griseb. Mem. Amer. Acad. n. ser. 8: 534. 1862.

Banks of creeks, May 28, *Wright* 756.

The Grisebach specimen is from eastern Cuba in 1859, no. 756.

Grisebach[b] cites this number also under *Isachne leersioides*. This appears to be an error, as in Grisebach's herbarium this number occurs only with *Triscenia ovina*. Wright's 756 in the Gray Herbarium is from "banks of Pinal Creek in small dense tufts, Monte Verde, Aug. 10, 1859."

18. REIMAROCHLOA gen. nov.

Spikelets lanceolate, acuminate, solitary, subsessile along one side of a flattened narrow rachis (the back of the fertile lemma turned toward it), forming few to several slender racemes, approximate at the summit of the culm, spreading or reflexed at maturity; glumes obsolete except in the terminal spikelet in which one glume is frequently present; sterile lemma exceeding the fruit; fertile lemma scarcely indurated, faintly nerved, long-acuminate, inrolled at the base only, the palea of similar texture, free nearly half its length.

Perennials of the tropics and subtropics of the Western Hemisphere.

The genus Reimaria as established by Flügge on the single differentiating character "uniglumis," included three species, the first two of which, *R. candida* and *R. elegans*, differ from Paspalum only in having spikelets without glumes, a character which is unreliable in this group of Paniceae. The third species, *R. acuta*, together with those added to Reimaria by later authors, constitutes a distinct genus distinguished by the characters in the diagnosis above. Considering that Flügge's three species are not congeneric, but that the first two on the one hand and the third on the other must be separated, it is necessary that the name Reimaria go with the larger group.[c] Reimaria then becomes a synonym of Paspalum, or if the glumeless species, *P. candidum* H. B. K., *P. pulchellum* H. B. K., *P. elongatum* Griseb., etc., be considered generically distinct, the name would apply to this group. For *R. acuta* and its allied species the above name is proposed with *Reimaria acuta* Flügge as the type: **Reimarochloa acuta** (Flügge). *Paspalum vaginatum* Sw. and *P. distichum* L. (in which both glumes are occasionally present) in habit and texture of the acute fruits show a closer affinity to this genus than do the glumeless species mentioned above.

Spikelets about 2 mm. long.....1. *R. brasiliensis.*
Spikelets about 5 mm. long.....2. *R. oligostachya.*

1. **Reimarochloa brasiliensis** (Spreng.).

Agrostis brasiliensis Spreng. Nov. Prov. Hal. 45. 1819.
Reimaria brasiliensis Schlecht. Bot. Zeit. 10: 17. 1852.
Panicum oxyanthum Steud. Syn. Pl. Glum. 1: 41. 1854.
Wright 3437; Isle of Pines, *Curtiss* 497.

Grisebach's specimen of this number is from "savannas, Hanabana, May 22." Another specimen in his herbarium from "low wet ground around ponds, Hanabana"

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[a] Rep. Mo. Bot. Gard. 10: *pl. 6.* 1899.
[b] Cat. Pl. Cub. 234. 1866.
[c] American Code, Canon 15 (Bull. Torr. Club 31: 173. 1904); Vienna Code, Art. 45.

Arthrostylidium stipitatum Hack. Cuba.

bears the secondary number 206. The specimen in the Gray Herbarium is labeled, "Wet savannas, Candelaria, June 5, 1860–64." The type of *Panicum oxyanthum* Steud. labeled "Ins. St. Domingo, Legit Poiteau 1802 cf. hrbr Delessert 54" in the museum at Paris, is a small specimen of this species; that in the Delessert Herbarium is a good specimen.

2. **Reimarochloa oligostachya** (Munro).

Reimaria oligostachya Munro; Benth. Journ. Linn. Soc. **19:** 34. 1882.

Wright 3854 in National Herbarium.

This number of Wright's is mentioned in the original description, though the type is *Curtiss* 3566 from Florida. The specimen in the Sauvalle Herbarium with the number 3854 is *Paspalum vaginatum* Sw. In the Grisebach Herbarium is a specimen of *Reimarochloa oligostachya* labeled "Damp ground around ponds Hanabana," 1865, and bearing the secondary number 180. The sheet of *Wright* 3854 in the Gray Herbarium bears two plants of *R. oligostachya* and one of *Paspalum distichum*.

19. PASPALUM L. Syst. ed. 10, 855. 1759.

Rachis dilated and membranaceous ..... 9. *P. dissectum.*
Rachis not dilated and membranaceous.
  Racemes terminal and also from the uppermost sheath.
    Blades pubescent on both surfaces ..... 7. *P. debile.*
    Blades glabrous or nearly so, often ciliate on margins.
      Blades ciliate, 4 to 5 mm. wide ..... 25. *P. propinquum.*
      Blades not ciliate.
        Blades less than 2 mm. wide; first glume obsolete ..... 27. *P. rigidifolium.*
        Blades about 1 cm. wide; first glume present .. 23. *P. pedunculatum.*
  Racemes terminal only.
    Racemes in pairs—that is, normally 2 and approximate.
      Plants with creeping rootstocks.
        Spikelets pubescent on convex surface ..... 10. *P. distichum.*
        Spikelets glabrous on convex surface ..... 30. *P. vaginatum.*
      Plants without creeping rootstocks.
        Both glumes obsolete ..... 26. *P. pulchellum.*
        First glume only obsolete.
          Spikelets circular 1.5 mm. long or less.
            Spikelets papillose or nearly glabrous .. 22. *P. papillosum.*
            Spikelets villous on the margins ..... 6. *P. conjugatum.*
          Spikelets lanceolate or elliptical, 2 mm. long or more.
            Spikelets loosely imbricated; spikes ascending ..... 15. *P. lineare.*
            Spikelets densely imbricated; spikes spreading.
              Spikelets 2 mm. long ..... 18. *P. minus.*
              Spikelets 3 mm. long ..... 20. *P. notatum.*
    Racemes 1 to several; if 2, the lower at some distance below the terminal and the number not constant.
      Racemes usually 1, sometimes 2.
        Spikelets transversely wrinkled.
          Blades involute, glabrous, elongated, 40 to 60 cm. long ..... 12. *P. filiforme.*
          Blades flat, pubescent, 5 to 15 cm. long ... 19. *P. nanum.*

Spikelets not transversely wrinkled.
Pubescence glandular..... 5. *P. clavuliferum.*
Pubescence if present not glandular.
Spikelets about 1 mm. long.....29. *P. rupestre.*
Spikelets 2 to 3 mm. long.
Blades short, 10 cm. long, villous..28. *P. rottboellioides.*
Blades elongated 30 to 50 cm. long, glabrous..... 1. *P. alterniflorum.*
Racemes more than 1, often numerous.
First glume present..... 4. *P. ciliiferum.*
First glume obsolete.
Sterile lemma transversely wrinkled; spikelets brown.
Spikelets obovate.....24. *P. plicatulum.*
Spikelets elliptical.....11. *P. elatum.*
Sterile lemma not transversely wrinkled.
Racemes few, mostly 2 to 4.
Spikelets flattened.....16. *P. lividum.*
Spikelets distinctly convex.
Spikelets pubescent.
Pubescence glandular... 2. *P. arenarium.*
Pubescence not glandular..... 3. *P. caespitosum.*
Spikelets glabrous.
Spikelets elliptical, about 1 mm. wide ....13. *P. glabrum.*
Spikelets circular, about 2 mm. wide.....14. *P. hemicryptum.*
Racemes numerous.
Spikelets pubescent.
Spikelets hemispherical, slightly exceeding 1 mm. long.....21. *P. paniculatum.*
Spikelets flatter, 2 mm. long..31. *P. virgatum.*
Spikelets glabrous.
Axis long-pilose..... 8. *P. densum.*
Axis not pilose.
Spikelets elliptical, about 3 mm. long.....32. *P. virgatum schreberianum.*
Spikelets obovate-circular, 2 to 2.5 mm. long..17. *P. millegrana.*

1. **Paspalum alterniflorum** Rich. in Sagra, Hist. Cub. **11**: 299. 1850.

Paspalum dolichophyllum Hack. Inf. Est. Centr. Agron. Cuba **1**: 409. 1906.

Wright 3841; Guanabacoa, *Leon* 117 in part; Habana, *Tracy* 9105, *Baker*, *Tracy & Hasselbring* in 1907, *Leon* 564, 585; Marianao, *Leon* 581. Calabazon, *Baker & O'Donovan* HC 4545; Matanzas, *Rugel* 894 in Herb. N. Y. Bot. Gard.

Grisebach's specimen of this species was collected in 1865 and is accompanied by the data, "In small dense tufts, low savannas, Hanabana, May 19." The sheet bears the secondary number 167. The Sauvalle specimen is accompanied by the two numbers, 3841 and 167, thus connecting the two. In the Grisebach Herbarium is a specimen of this collected in Cuba by Rugel and numbered 753a. Grisebach refers[a] to "Rug. 894" under this name. Richard's type is at Paris.

[a] Cat. Pl. Cub. 231. 1866.

2. **Paspalum arenarium** Schrad.; Schult. Mant. **2**: 172. 1824.
Paspalum simpsoni Nash, Bull. Torr. Club **24**: 29. 1897.
Wright 3443 in part, in National Herbarium, and in Gray Herbarium.
Spikelets similar to those of *P. caespitosum* (*Wright* 3443, in part, in National Herbarium), but glandular-pubescent; leaves mostly near the base of the plant, the blades ciliate on the margins, otherwise glabrous, flat, less than 10 cm. long, 5 to 6 mm. wide; spikes 1 to 3.
From this *P. longepedunculatum* Le Conte of the southeastern United States differs in having glabrous spikelets and longer, thinner blades. *Pittier* 1847 from Honduras should also be referred to *P. arenarium*.

3. **Paspalum caespitosum** Flügge, Mon. Pasp. 161. 1810.
Low wet woods, Pinar del Rio, September, *Wright* 3443 in part; Cojimar, *Baker* HC 2899, 2903, *Hitchcock* in 1906; Triscornia, *Tracy* 9087, *Hitchcock* in 1906; Habana, *Leon* 268; Batabano, *Hitchcock* in 1906; Matanzas, *Britton & Wilson* 11, 236 in Herb. N. Y. Bot. Gard., *Britton & Shafer* 63 in Herb. N. Y. Bot. Gard.
Grisebach's specimens of this are labeled "910=3443" from western Cuba, 1863, and "97=3443" from eastern Cuba, 1860. A third "290=3444," collected in 1865, agrees with these and not with 3444 [see *P. clavuliferum* Wright]. There are two sheets of Wright's specimens in the Gray Herbarium numbered 3444, of which one is *Paspalum clavuliferum*, the other *P. caespitosum*. The latter is labeled "In crevices of rocks in the channel of the river Santa Cruz, Aug. 27." Wright's 3443 in the Gray Herbarium is labeled "Rocky ridges, Holguin-Barajugua, Aug. 21."

4. **Paspalum ciliiferum** (Nash).
Dimorphostachys ciliifera Nash in Small, Fl. Southeast. U. S. 78. 1903.
Arroyo Naranjo, *Leon* 587; Matanzas, *Britton & Wilson* 148; Madruga, *Britton & Shafer* 751, both in Herb. N. Y. Bot. Gard.

5. **Paspalum clavuliferum** Wright, Anal. Acad. Cienc. Habana **8**: 203. 1871; Sauv. Fl. Cub. 195.
Paspalum falcula Doell in Mart. Fl. Bras. **2**^{2}: 60. 1877.
Wright 3444 in National Herbarium.
This resembles *P. papillosum* Spreng., but the spikes are usually solitary instead of in pairs and the spikelets obovate instead of orbicular. The type of this is in the Gray Herbarium. The plant in the Sauvalle Herbarium under this number is a different species, as are the two specimens in the Grisebach Herbarium which are said to be "=3444" (cf. *P. caespitosum* and *P. rupestre* of this list). Salzmann's specimen in Trinius's herbarium from Bahia, labeled *Paspalum horticola* Salzm., belongs to this species. Salzmann's name was mentioned as a synonym by Steudel under *P. papillosum*.[a] To *P. clavuliferum* may be referred *Pringle* 2359 and 11762 from Mexico, and *Smith* 175 from Colombia.

6. **Paspalum conjugatum** Berg. Act. Helv. **7**: 129. 1772.
Roadsides, Hanabana, *Wright* 767; Herradura, *Baker* HC 2672, *Hitchcock* in 1906; mountains north of San Diego de los Baños, *Palmer & Riley* 541; Santiago de las Vegas, *Baker* HC 2658, 2659, *Wilson* 543, 1006, *Hitchcock* in 1906; Sagua, *Britton & Wilson* 265; valley of the St. Augustine, *Britton & Wilson* 510, 515; Guajay, *Wilson* 342; Habana, *Wilson* 1277, *Leon* 302. The following are in the herbarium of the New York Botanical Garden: Isle of Pines *Curtiss* in 1904; Santiago de Cuba, *Taylor* 146; Baracoa, *Underwood & Earle* 1162; Cuba, *Rugel* 788; Matanzas, *Rugel* 912.

7. **Paspalum debile** Michx. Fl. Bor. Amer. **1**: 44. 1803.
Paspalum villosissimum Nash, Bull. Torr. Club **24**: 40. 1897.
Herradura, *Hitchcock* in 1906.

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[a] Steud. Syn. Pl. Glum. **1**: 17. 1854.

8. **Paspalum densum** Poir. in Lam. Encycl. **5**: 32. 1804.

Dense bunches in ponds, Pinar del Rio, September, *Wright* 3447.

There is a second specimen of this species in the Sauvalle Herbarium, without locality, erroneously numbered 3462. In the Grisebach Herbarium there are two specimens of this species, one from western Cuba, 1863, numbered "866=3447," the other from "Low wet savannas; Hanabana," 1865.

9. **Paspalum dissectum** (L.) L. Sp. Pl. ed. 2. 81. 1762.

Panicum dissectum L. Sp. Pl. 57. 1753.

Paspalum membranaceum Walt. Fl. Car. 75. 1788.

Low grounds around ponds, procumbent. Hanabana, June 10, *Wright* 169 [Secondary number].

The same number occurs in the Grisebach Herbarium. A second specimen of this species, from eastern Cuba, 1860, is numbered "98=3440." The specimen in the National Herbarium is numbered 3440. For a discussion of the type of *P. dissectum* L., see Contr. Nat. Herb. **12**: 115. 1908.

10. **Paspalum distichum** L. Syst. Nat. ed. 10. **2**: 855. 1759.

Wright 1546; Habana, *Curtiss* 764; Santiago de las Vegas, *Baker & Wilson* 385; Playa de Marianao, *Palmer & Riley* 848; Herradura, *Tracy* 9056; Isle of Pines, *Curtiss* in 1904; Matanzas, *Britton & Wilson* 67, both in Herb. N. Y. Bot. Gard.

Grisebach's specimen of Wright's 1546 is from eastern Cuba; a second specimen of the same species is from western Cuba, 1863, and is numbered "911=1546." In the National Herbarium is a sheet of Wright's with the secondary number 292 which is part this species and part *P. vaginatum* Sw.

11. **Paspalum elatum** Rich.; Doell in Mart. Fl. Bras. **2**^{2}: 78. 1877.

Wright 3843.

This specimen is referred to this species from description only, as no authentic specimens of *P. elatum* have been examined. It is a much taller grass than *P. plicatulum* Michx., which it resembles, with more elliptical and less convex spikelets.

12. **Paspalum filiforme** Sw. Prod. 22. 1788.

Paspalum swartzianum Flügge, Mon. Pasp. 96. 1810.

Paspalum approximatum Doell in Mart. Fl. Bras. **2**^{2}: 82. 1877.

In pastures forming tufts, Retiro, July, *Wright* 769; Isle of Pines, *Curtiss* 523, 374, *Palmer & Riley* 949; Guanabacoa, *Hitchcock* in 1906; Rincon, *Britton & Wilson* 477 in Herb. N. Y. Bot. Gard.

Grisebach's specimen of *Wright* 769 was collected, "1860–1864," "in the edge of woods, Hanabana, May 28." Another of his specimens with the secondary number 165, in 1865 is also from Hanabana, May 23, "in small tufts."

Doell [a] refers *P. filiforme* Sw. to *P. caespitosum* Flügge. This is not the plant that Swartz describes, as is shown by the original description in the Prodromus and the later amplified description in his Flora.[b] Swartz describes his plant as having a single spike, ovate spikelets, and filiforme leaves, while *P. caespitosum* has 3 to 5 spikes, oblong-obovate spikelets, and flat blades.

13. **Paspalum glabrum** Poir. in Lam. Encycl. **5**: 30. 1804.

Paspalum bakeri Hack. Inf. Est. Centr. Agron. Cuba **1**: 410. 1906.

Habana, *Baker* 1824; Triscornia, *Hitchcock* in 1906; without locality, *Wright* 298; Matanzas, *Rugel* 869 in Herb. N. Y. Bot. Gard.

In the Grisebach Herbarium is a specimen of *P. glabrum* labeled, "In small tufts, sand banks near the sea, Palma Sola, July 15," 1865, and bearing the secondary number

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[a] Loc. cit.

[b] Fl. Ind. Occ. **1**: 136. 1797.

298. This species is represented in the Gray Herbarium by *Wright* 3846, a number which is not mentioned in Sauvalle's Flora Cubana. *P. helleri* Nash[a] of Porto Rico differs in having somewhat smaller pubescent spikelets.

14. **Paspalum hemicryptum** Wright, Anal. Acad. Cienc. Habana **8**: 204. 1871; Sauv. Fl. Cub. 196.

Paspalum inops Vasey, Contr. Nat. Herb. **1**: 281. 1893.

Low savannas, El Salado, August, *Wright* 3847.

The type of *P. inops* Vasey (*Palmer* 592 from Guadalajara, Mexico, in the National Herbarium) agrees with Wright's type in the Gray Herbarium.

15. **Paspalum lineare** Trin. Gram. Pan. 99. 1826.

Herradura, *Baker* 3459; Isle of Pines, *Curtiss* 379.

The type in the Trinius Herbarium is from Brazil, collected by Langsdorff, and is included in the same cover with *P. angustifolium* Nees. Trinius published the latter name on the same page of the work cited, but preceding *P. lineare* on the page. The type is said to be from "Brazil (N. ab Esenb.)." The type specimen is labeled "*Paspalum angustifolium* N. ab Es. In Brasilia. Mis Auctore." This specimen, however, is not *P. lineare*, but has, as described, smaller spikelets with rugose transversely wrinkled glumes. *P. angustifolium* as described three years later[b] is the same as *P. lineare* Trin., while variety β is *P. angustifolium* as described by Trinius. Consequently *P. neesii* Kunth is a typonym of *P. angustifolium*, since Kunth changes the name of the latter on account of the earlier *P. angustifolium* Le Conte, but the name does not apply to the Cuba plant under consideration.

16. **Paspalum lividum** Trin.; Schlecht. Linnaea **2**: 383. 1854.

Habana, *Leon* 272, 571, *Tracy* 9119; Marianao, *Leon* 588.

This Mexican species is probably a recent introduction into Cuba. The type from Hacienda de la Laguna, Mexico, *Schiede*, in the Trinius Herbarium, is included in the cover of *P. denticulatum* Trin., but the two specimens are not the same species. The latter has larger spikelets.

17. **Paspalum millegrana** Schrad.; Schult. Mant. **2**: 175. 1824.[c]

Paspalum underwoodii Nash, Bull. Torr. Club **30**: 375. 1903.

Paspalum lentiginosum Presl, err. det. Mez in Urban, Symb. Antill. **4**: 82. 1903.

Habana, *Tracy* 9121; without locality, *Wright* 3840. [illegible] specimens is different from the other which can be P. underwoodii

The Sauvalle specimen is also numbered 170. As I have not examined Schrader's type the reference to this is only provisional and based on description. Our specimens are the same as *P. vulnerans* Salzm., from Bahia, as distributed to the National Herbarium. Other specimens in the National Herbarium to be referred here are: Porto Rico: *Britton & Cowell* 1449, *Heller* 4368, *Goll* 923, *Underwood & Griggs* 149. Jamaica: *Britton* 841 in Herb. N. Y. Bot. Gard. Wr. 3446 (J.D. Sm. Herb)

18. **Paspalum minus** Fourn. Mex. Pl. **2**: 6. 1886.

Herradura, *Baker & Abarca* HC 4180, *Tracy* 9093, *Hitchcock* in 1906; Isle of Pines, *Palmer & Riley*, 978; without locality, *Wright* 3438; Guanabacoa, *Leon* 117 in part; La Magdalena, *Baker* 2. The following are in the herbarium of the New York Botanical Garden: Sagua, *Britton & Wilson* in 1903; Pinar del Rio, *Shafer* 477; Isle of Pines, *Curtiss* in 1904.

These agree with the duplicate type in the National Herbarium (Mexico, *Bourgeau* 2298). The spikelets are about 2 mm. long. Wright's 3438 in the National Herbarium is partly this and partly *P. notatum*. Grisebach's specimen, from western Cuba, 1863, numbered "936=3438," is all *P. minus*. The other specimens in this cover

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[a] Bull. Torr. Club **30**: 376. 1903.

[b] Nees, Agrost. Bras. 64. 1829.

[c] The specific name as used by Schrader is a noun.

have spikelets 3 mm. long and are *P. notatum* (Jamaica, *Alexander;* Trinidad, *Sieber* 364, labeled *P. taphrophyllum* Steud.; Antigua, *Wullschlaegel*). A part of *Wright* 3438 in the Torrey Herbarium is *P. minus* and a part is *P. notatum.*

19. **Paspalum nanum** Wright; Griseb. Cat. Pl. Cub. 230. 1866.

Paspalum caudicatum Wright, Anal. Acad. Cienc. Habana **8**:205. 1871; Sauv. Fl. Cub. 196.

Wright 176 (secondary number); sandy pine woods, Pinar del Rio, October, *Wright* 3866; Herradura, *Hitchcock* in 1906; Isle of Pines, *Taylor* 40, *Curtiss* in 1904, both in Herb. N. Y. Bot. Gard.

The type of *P. nanum* is *Wright* 176 in the Grisebach Herbarium, collected in "Bushy savannas, Hanabana, June 1," 1865. This agrees with *Wright* 3866, the type of *P. caudicatum*, in the Gray Herbarium.

The specimen in the National Herbarium is numbered 3842. The specimen in the Grisebach Herbarium bears the label, "176. Bushy savannas. Hanabana, June 1."

Spikelets sent by Professor Le Comte[a] from the plant supposed to be the type of *Paspalum lindenianum* Rich.[b] show this plant to be the same as *P. nanum* Wright, but this species does not agree with Richard's description in so far as the blades are said to be glaucous and glabrous except the ciliate margins, while in *P. nanum* the blades are pubescent on the surface. Pending a further examination of the type the name *P. nanum* is retained.

20. **Paspalum notatum** Flügge, Mon. Pasp. 106. 1810.

Herradura, *Hitchcock* in 1906, *Baker* HC 2968; Arroyo Galiano, *O'Donovan* HC 5210; Isle of Pines, *Palmer & Riley* 1119; Lomas de Managua, *Baker & Wilson* HC 299; Habana, *Baker, Tracy & Hasselbring* HC 3097, *Tracy* 9118; Guines, *Leon* 117b; Matanzas, *Britton & Wilson* 444 in Herb. N. Y. Bot. Gard.

As stated above, a part of *Wright* 3438 in the National Herbarium is this species and a part is *P. minus* Fourn. The spikelets of the species as here understood are about 3 mm. long. The type has not been examined. The Baker & Wilson plant, HC 299, cited above, is larger than the other specimens, with spikelets 4 mm. long, and may be a distinct species. Wright's 3438 in the Gray Herbarium is *P. notatum;* it is labeled "Savannas Chirigote, July 11." This number in the Torrey Herbarium is part *P. notatum* and part *P. minus.*

21. **Paspalum paniculatum** L. Syst. Nat. ed. 10. **2:** 855. 1759.

Savannas, Retiro, *Wright* 766; San Diego de los Baños, *Palmer & Riley* 544; El Guama, *Palmer & Riley* 179a; hills near Candelaria, *Earle & Wilson* HC 1625; Guines, *Leon* 579; Cienfuegos, *Combs* 295 in Gray Herbarium. The following are in the herbarium of the New York Botanical Garden: Matanzas, *Britton & Shafer* 576; Santiago de Cuba, *Taylor* 377; Jaguey, *Eggers* 5317.

Grisebach's specimen is from eastern Cuba, 1859, no. 766. Nash[c] applies this name to *Panicum fasciculatum* Sw., but as has been shown elsewhere[d] the name *Paspalum paniculatum* L. should be applied to the Linnæan plant, as heretofore, and not to the Sloane plate cited, through error, by Linnæus.

22. **Paspalum papillosum** Spreng. Nov. Prov. Hal. 47. 1819.

~~*Paspalum pittieri* Hack. Oesterr. Bot. Zeitschr. **51:** 233. 1901.~~

Low savannas, Chirigote, October 26, *Wright* 3844; Herradura, *Baker* HC 2954, 4185, *Hitchcock* in 1906.

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[a] See footnote, p. 193.

[b] Rich. in Sagra, Hist. Cub. **11**:299. 1850. The type is *Linden* 1813.

[c] Bull. Torr. Club **30:** 381. 1903.

[d] Contr. Nat. Herb. **12:** 116. 1908.

I have not seen the type of this species, but in the Trinius Herbarium there is a specimen labeled "*Paspalum papillosum* Sprengel, mis. cl. auctor." The Cuban plants agree with this, except that the spikelets are less glandular, the flat surface being quite glabrous. Agreeing with Sprengel's specimen are two in the Trinius Herbarium, one collected by Salzmann in Bahia labeled "*Paspalum horticola maritima* Salzm." and another by Riedel at Bahia in 1831. Tonduz's 4474 from Costa Rica belongs here. Wright's 3444 in the Torrey Herbarium is *P. papillosum*.

23. **Paspalum pedunculatum** Poir. Encycl. Suppl. **4**: 315. 1816.
Paspalum decumbens Sw. Prod. 22. 1788, not Rottb. 1778.
Panicum decumbens Roem. & Schult. Syst. **2**: 429. 1817.
Paspalum vaginiflorum Steud. Syn. Pl. Glum. **1**: 19. 1854.
Dimorphostachys pedunculata Fourn. Mex. Pl. **2**: 15. 1886.
Banks of Rio San Sebastian, Pinar del Rio, December, *Wright* 3851; Isle of Pines, *Curtiss* 327.
A second Wright label reads, "Damp woods, Rangel, Dec."
Steudel's type, from "Guiana, *Lenormand*" is in the museum at Paris.

24. **Paspalum plicatulum** Michx. Fl. Bor. Amer. **1**: 45. 1803.
Savannas, Retiro, *Wright* 768; in small tufts, pinales, Pinar del Rio, *Wright* 3839; Magay, *Baker & Wilson* HC 354; Santiago de las Vegas, *Wilson* 420, 421, 425, *Baker* 2056, 3112, 3113, 3454, *Baker & Wilson*, 545, 596, *Hitchcock* in 1906; La Magdalena, *Baker* 5, 7; Habana, *Tracy*, 9117; Herradura, *Tracy* 9051, 9052, *Hitchcock* in 1906; Isle of Pines, *Palmer & Riley* 947, *Taylor* 38; Cienfuegos, *Combs* 262 in Gray Herbarium. The following are in the herbarium of the New York Botanical Garden: Isle of Pines, *Curtiss* in 1904; Alto Cedro, *Underwood & Earle* 1621; Matanzas, *Britton & Wilson* 429; Sagua, *Britton & Wilson* 280, 285, 337; La Soledad, *Eggers*, 5405.
The Grisebach specimen, from "edge of savannas, Hanabana, May 19," 1856, bears the secondary number 166. Wright's 768 in the Gray Herbarium is labeled, "Savannas, Chirigote, July 11."

25. **Paspalum propinquum** Nash, Bull. N. Y. Bot. Gard. **1**: 291. 1899.
Wright 3845.

26. **Paspalum pulchellum** Kunth, Mem. Mus. Hist. Nat. **2**: 68. 1815.
Reimaria elegans Flügge, Mon. Pasp. 216. 1810, not *Paspalum elegans* Kunth, Enum. **1**: 59. 1833.
Wright 3439; Herradura, *Hitchcock* in 1906; Isle of Pines, *Curtiss* in 1904 in Herb. N. Y. Bot. Gard.
The specimen in the National Herbarium bears the secondary number 171. One of the Grisebach specimens is from western Cuba in 1863, and is numbered "915=3439;" the other bears the secondary number 171 and is labeled "Bushy savannas, Hanabana, May 24, 1865." One sheet of this in the Torrey Herbarium is numbered 3839.

27. **Paspalum rigidifolium** Nash, Bull. N. Y. Bot. Gard. **1**: 292. 1899.
Wright 3442.
The Grisebach specimen of this species, collected in western Cuba in 1863, bears the number "905=3442." Wright's 3442 in the Gray Herbarium is labeled "Savannas, Chirigote, July 11."

28. **Paspalum rottboellioides** Wright, Anal. Acad. Cienc. Habana **8**: 204. 1871; Sauv. Fl. Cub. 195.
Wright 3864; Isle of Pines, *Curtiss* 375, *Taylor* 41; Herradura, *Baker & Dimmock* HC 4813.
The type of this species is *Wright* 3864 in the Gray Herbarium.

29. **Paspalum rupestre** Trin. Linnaea **10:** 293. 1836.

Wright 3444, 3445; near Habana, *Hitchcock* in 1906; *Leon* 286. 1997, 1996, 1527

The Grisebach specimen is from eastern Cuba, 1860, numbered "109=3445," and is labeled, "*Paspalum lindenianum* Rich. (Megaphyllum Steud.)," under which name it is listed in Grisebach's Catalogue of Cuban Plants.[a] A second specimen is from western Cuba, 1863, and is numbered "939=3445." A third specimen collected in 1863 and numbered "943=3444," is included by Grisebach in his cover of *P. caespitosum*. Wright's 3445 in the Gray Herbarium is labeled "Pinales near Baracoa, June 15."

30. **Paspalum vaginatum** Sw. Prod. 21. 1788.

Digitaria foliosa Lag. Gen. & Sp. Nov. 4. 1816.

Hanabana, Doctor Robbins, *Wright* 3854; Habana, *Curtiss* 751; Batabano, *Baker* HC 2294, 1863.

The characters which separate this from *P. distichum* L., the glabrous spikelets and more or less suppressed midnerve of the glume, may prove to be inconstant. Grisebach's specimen from western Cuba, 1863, numbered 947, is this species. A part of *Wright* 1546 (1546a) in the Torrey Herbarium has glabrous spikelets, and consequently would be referred to *P. vaginatum*.

Lagasca's type, labeled "*Digitaria foliosa* sp. n. ex Havana, Boldo iter," is in the herbarium of the Botanical Garden at Madrid.

31. **Paspalum virgatum** L. Syst. Nat. ed. 10. **2:** 855. 1759.

Paspalum leucocheilum Wright, Anal. Acad. Cienc. Habana **8:** 203. 1871; Sauv. Fl. Cub. 194.

Isle of Pines, *Curtiss* 501, *Taylor* 42, *Palmer & Riley* 1057; without locality, *Wright* 3446; La Magdalena, *Baker* HC 3626, *Britton & Shafer* 243 in Herb. N. Y. Bot. Gard.; Santiago de las Vegas, *Baker* HC 544, 595; Las Acostas, *Baker* HC 5242, 5246; Batabano. *Baker* HC 3967; Arroyo Galiano, *Baker* HC 5211; Habana, *Tracy*, *Baker & Hasselbring* HC 3085, *Tracy* 9120, 9122, 9123, 9124; Guanabacoa, *Leon* 195; Herradura, *Tracy* 9127, *Hitchcock* in 1906; San Diego de los Baños, *Palmer & Riley* 628; Guines, *Leon* 578, Pinar del Rio, *Shafer* 479 in Herb. N. Y. Bot. Gard.; Matanzas, *Britton & Wilson* 155, 455 in Herb. N. Y. Bot. Gard.

Grisebach's specimen is numbered 302 (labeled *β stramineum*), while the specimen in the Sauvalle Herbarium bears this number in addition to no. 3446. The type specimen of *P. leucocheilum* Wright is in the Gray Herbarium. The spikelets are somewhat smaller than normal (2 mm. long), and the inflorescence consists of a single spike partially concealed in the uppermost sheath. The spikelets have the shape and pubescence of *P. virgatum*.

31a. **Paspalum virgatum schreberianum** Flügge, Mon. Pasp. 190. 1810.

Guanajay, *Palmer & Riley* 813 in part; Herradura, *Hitchcock* in 1906; Batabano, *Hitchcock* in 1906; Habana, *Tracy* 9125, 9126; *Wright* 3446 in Gray Herbarium; *Rugel* 898 in Gray Herbarium; Isle of Pines, *Curtiss* in 1904 in Herb. N. Y. Bot. Gard. Cienfuegos, *Combs* 262 in Herb. N. Y. Bot. Gard.

This differs from *P. virgatum* in its scarcely pilose rachis and oblong-obovate, acute, glabrous spikelets. It appears to be a distinct species, but as the type has not been examined, our plants are referred as above, rather than separated under a new name. This form appears to be included in *P. virgatum glabriusculum* by Doell in Martius's Flora Brasiliensis.[b] Wright's 3446 in Gray Herbarium is labeled, "In large tufts on sand bars of the Baracoa near N. Sophie, Sept. 11."

32. **Paspalum** sp.

Wright 3848. *leptocaulis*

This specimen in the Sauvalle Herbarium is too fragmentary to identify. It appears to belong to none of the species enumerated in the list. It is listed in Sau-

[a] See note under *P. nanum*.

[b] **2**[2]: 89. 1877.

valle's Flora Cubana as "*P. swartzianum* Flügg?," but it is not that species as here understood. The specimen in the Gray Herbarium is less fragmentary. The blades are long and narrow, 30 or 40 cm. long and less than 1 mm. wide; terminal spike single; spikelets glabrous, 1.5 mm. long. A part of *Wright* 3444 in the Gray Herbarium appears to be this species.

Pasp. sp. Leon 947 — P. monostachyum
Pasp. sp. Leon 948, 950 -

20. **AXONOPUS** Beauv. Agrost. 12. 1812.

1. **Axonopus compressus** (Sw.) Beauv. Agrost. 12. 1812.

Milium compressum Sw. Prod. 24. 1788.

Paspalum compressum Rasp. Ann. Sci. Nat. I. **5**: 301. 1825.

Wet places in roads and elsewhere Zarabanda, May 21, *Wright* 3849, *Wright* 3850, *Wright* 763 in Gray Herbarium; Isle of Pines, *Curtiss* 306, 511; Habana, *Curtiss* 606, *Leon* 298; Herradura, *Hitchcock* in 1906, *Tracy* 9092; San Antonio, *Baker* HC 2946, *Hitchcock* in 1906; Santiago de las Vegas, *Hitchcock* in 1906; Managua, *Baker & Wilson* 314 in Herb. N. Y. Bot. Gard.; Matanzas, *Britton & Wilson* 104 in Herb. N. Y. Bot. Gard.

In the Grisebach Herbarium are two specimens of this species, one of 1865 labeled, "Roadside, Hanabana, May 18," and bearing the secondary number 168, and one of no. 765, 1860–64. The Sauvalle specimen of *Wright* 3850 has two labels, with localities El Salado and Retiro. This number has narrower blades and larger spikelets, about 3 mm. long. This may be *Paspalum tristachyon* Lam.,[a] the type of which I have not seen. The sheet of *Wright* 3849 in the Gray Herbarium bears also a specimen of *Syntherisma digitata*.

21. **LEPTOCORYPHIUM** Nees, Agrost. Bras. 83. 1829.

1. **Leptocoryphium lanatum** (H. B. K.) Nees, Agrost. Bras. 83. 1829.

Paspalum lanatum H. B. K. Nov. Gen. & Sp. **1**: 94. 1816.

Wright 3429; Isle of Pines, *Palmer & Riley* 440, 972, *Curtiss* 393; La Magdalena, *Baker* HC 4555; Herradura, *Hitchcock* in 1906, *Tracy* 9048, 9071. The following are in the herbarium of the New York Botanical Garden: Santa Clara, *Britton & Wilson* 335; Pinar del Rio, *Shafer* 481; Cedro, *Underwood & Earle* 1451, 1459.

Grisebach's specimen, from western Cuba in 1863, is numbered "919=3429." Wright's 3429 in the Gray Herbarium is labeled, "Wet savannas, Candelaria, June 3," and "Savannas near Pinar del Rio, Dec. 11."

22. **ERIOCHLOA** H. B. K. Nov. Gen. & Sp. **1**: 94. *pl. 30. 31.* 1816.

Blades filiform.....1. *E. filifolia.*
Blades flat.
Fruit tipped with a slender awn 1 mm. long; blades 7 to 15 mm. wide.....2. *E. punctata.*
Fruit merely apiculate; blades 2 to 3 mm. wide.....3. *E. ramosa.*

1. **Eriochloa filifolia** sp. nov.

Plant cespitose; culms numerous, very slender, almost capillary, glabrous, 10 to 20 cm. high, erect or more or less geniculate below; leaves glabrous, blades very narrow, convolute-setaceous, the lower about 10 cm. long, the upper shorter, the uppermost 1 to 2 cm.; spikes mostly 2, erect, 1 to 2 cm. long, one terminal, the other 5 to 10 mm. below; rachis capillary, minutely pubescent or scabrous, pubescent at base; spikelets 4 to 8, 3 mm. long, secund in a single row, the pedicels slender, about 1 mm. long, the cup or joint dark-colored; glume and sterile lemma about

[a] Tabl. Encycl. **1**: 176. 1791.

equal, ovate-acuminate, pilose with appressed hairs, sterile lemma empty; fertile lemma oval, glabrous, 1.5 mm. long, tipped with a slender scabrous awn about 1 mm. long.

Jata Hills near Guanabacoa, *Hitchcock*, March 15, 1906, no. 559392 in the U. S. National Herbarium (type).

2. **Eriochloa punctata** (L.) Hamilt. Prod. Fl. Ind. Occ. 5. 1825.
Milium punctatum L. Syst. ed. 10. **2:** 872. 1759.
Wright 1542; Yumary Mountains, *Rugel* 889 in Herb. N. Y. Bot. Gard.

There are two specimens of this species in the Grisebach Herbarium, both from eastern Cuba, one collected in 1859, marked 1542, the other in 1860, with the secondary number 95. In the Gray Herbarium there are also two sheets of the same, one collected near Monte Verde, eastern Cuba, in 1859, "River bank Saltadero, Sept. 11," the other from "Sand bars of the Baracoa near N. Sophie, Sept. 11," 1860–1864.

3. **Eriochloa ramosa** (Retz.) Kuntze, Rev. Gen. Pl. **2:** 775. 1891.
Milium ramosum Retz. Obs. **6:** 22. 1791.
Paspalus annulatus Flügge, Mon. Pasp. 133. 1810.
Eriochloa annulata Kunth, Rev. Gram. **1:** 30. 1829.
Wright 3886. 3850 (Hb. Kew Distrib.)

This agrees with Asiatic specimens and may be introduced. It differs from *E. punctata* in the narrower blades and the shorter awn to the fruit.

Allied to these is the Porto Rican **Eriochloa subglabra** (Nash). (*Monachne subglabra* Nash, Bull. Torr. Club **30:** 374. 1903; *Eriochloa punctata subglabra* Urban, Symb. Antill. **4:** 85. 1903). This species differs from *E. ramosa* in the broader blades and pronouncedly velvety nodes, and in habit; from *E. punctata* in the mucronate, instead of slender-awned, fertile lemma, and from both in having a staminate flower in the axil of the sterile lemma. Urban reduced this to a variety of *E. punctata* without having seen the plant.

23. ISACHNE R. Br. Prod. 196. 1810.

1. **Isachne leersioides** Griseb. Mem. Amer. Acad. n. ser. **8:** 533. 1862.
Wright 755 in National Herbarium (1547 in Sauvalle Herbarium).

Number 755 in the Sauvalle Herbarium is *Panicum exiguiflorum*. In the Grisebach Herbarium there are two specimens of *Isachne leersioides* collected by Wright in eastern Cuba—one in 1859, numbered 755, and one in 1860, numbered 102. In the Gray Herbarium there are three specimens bearing the number 755. One is *P. exiguiflorum;* the other two are *Isachne leersioides*, both from eastern Cuba—one in 1856–57, the other from Monte Verde in 1859. *Isachne leersioides* is listed in Sauvalle's Flora Cubana as no. 1547.

24. SYNTHERISMA Walt. Fl. Car. 76. 1788.

Rachis of racemes wing-angled.
  Spikelets 3 to 4 mm. long, more or less villous on nerves; rachis not pilose ..... 4. *S. sanguinalis.*
  Spikelets 2 mm. long, glabrous; rachis sparsely long-pilose ..... 1. *S. digitata.*
Rachis of racemes angled but scarcely winged.
  Spikelets about 3 mm. long, nearly glabrous ..... 5. *S. simpsoni.*
  Spikelets 1. 5 to 2.5 mm. long, usually villous-ciliate.
    Racemes usually less than 10 cm. long; spikelets 1.5 mm. long ..... 2. *S. filiformis.*
    Racemes usually more than 10 cm. long; spikelets 2 to 2.5 mm. long.

Blades much elongated, mostly 30 to 40 cm. long, nearly glabrous; spikelets about 2.5 mm. long.....3. *S. leucocoma.*
Blades shorter, mostly 10 to 20 cm. long, woolly-villous; spikelets about 2 mm. long.....6. *S. villosa.*

1. **Syntherisma digitata** (Sw.) Hitchc. Contr. Nat. Herb. **12:** 142. 1908.
Milium digitatum Sw. Prod. 24. 1788.
Digitaria setosa Desv.; Hamilt. Prod. Fl. Ind. Occ. 6. 1825.
Syntherisma setosa Nash, Bull. Torr. Club **25:** 300. 1898.
Wright 764 in part; Herradura, *Tracy* 9049, *Hitchcock* in 1906; Isle of Pines, *Curtiss* in 1904 in Herb. N. Y. Bot. Gard.

In the Grisebach Herbarium are two Wright specimens, no. 177 of 1865, "Bushy savannas, Hanabana, May 29," and no. 764 from eastern Cuba, 1856–57. Wright's 764 from eastern Cuba in 1856–57 in the Gray Herbarium is a mixture of *S. digitata* and *S. sanguinalis;* no. 764 of 1865 is the latter species only.

2. **Syntherisma filiformis** (L.) Nash, Bull. Torr. Club **22:** 420. 1895.
Panicum filiforme L. Sp. Pl. 57. 1753.
Panicum curvinerve Hack. Oesterr. Bot. Zeitschr. **51:** 335. 1901.
Wright 1544 in part.

The specimen of Wright's 1544 in the National Herbarium labeled, "Sandy pine woods, Pinar del Rio, Sept.," is partly this and partly *S. leucocoma* Nash. Hackel[a] bases his *P. curvinerve* upon this portion of *Wright* 1544. The characters which he mentions, such as the smooth glumes with incurving nerves, are found not infrequently among specimens of *S. filiformis* from the northern United States, whence the type was collected by Kalm. In the specimen of 1544 in the National Herbarium (the smaller portion with spikelets only 1.5 mm. long) part of the panicles have nearly glabrous spikelets, and part have long-pubescent spikelets. This differs distinctly from the other part of *Wright* 1544, which Hackel may have taken for the true *S. filiformis.* The amount of pubescence upon the spikelet is quite variable in this species as in others of this genus. The size of the spikelets, however, is fairly constant. In the Grisebach Herbarium there are two specimens of this from eastern Cuba, one collected in 1859 numbered 1544, the other in 1860 numbered "107=1544."

3. **Syntherisma leucocoma** Nash, Bull. Torr. Club **25:** 295. 1898.

Sandy pine woods in large tufts, Pinar del Rio, September, *Wright* 1544, in part; Herradura, *Hitchcock* in 1906.

Spikelets 2.5 mm. long; plants mostly glabrous or nearly so, tall, with elongated narrow blades and slender erect racemes as much as 25 cm. long.

4. **Syntherisma sanguinalis** (L.) Dulac, Fl. Haut. Pyr. 77. 1867.
Panicum sanguinale L. Sp. Pl. 57. 1753.
Asperella digitaria Lam. Tabl. Encycl. **1:** 167. 1791.

La Fermina, June 17, *Wright* 3883; *Wright* 764 in part; Habana, *Curtiss* 655, *Hitchcock* in 1906, *Leon* 301, 304; Santiago de las Vegas, *Hitchcock* in 1906, *Baker* HC 501; Puentes Grandes, *Leon* 279; Guanabacoa, *Hitchcock* in 1906; Batabano, *Hitchcock* in 1906; Cienfuegos, *Pringle* 46 in the Gray Herbarium; Guines, *Leon* 304. The following are in the herbarium of the New York Botanical Garden: Santiago de Cuba, *Taylor* 50; Isle of Pines, *Curtiss* in 1904; Rincon, *Britton & Wilson* 485; Matanzas, *Britton & Shafer* 333; Bayamese, *Eggers* 4690.

The sheet of 764 in the National Herbarium, like that in the Sauvalle Herbarium, consists of a mixture of this species and *S. digitata.* In the latter herbarium this number has two labels, one "Savannas, S. Cristobal, Aug.," the other "Sandy pine woods, Pinar del Rio, Sept." No. 764 in the National Herbarium has the label,

[a] Loc. cit.

"Savannas, Retiro, July." In the Grisebach Herbarium there are two specimens from Wright. One collected in 1865 and numbered 178, and 294 ("var. eriogona"); the other without number, labeled "Roads and fields, common, Hanabana, May 21."

Lamarck's type, labeled "Asperella digitaria lam. ill. ex. D. Richard," is in the Lamarck Herbarium in the Museum at Paris.

5. **Syntherisma simpsoni** (Vasey) Nash, Bull. Torr. Club **25**: 297. 1898.
Panicum sanguinale simpsoni Vasey, Contr. Nat. Herb. **3**: 25. 1892.
Isle of Pines, *Curtiss* 521.

Spikelets glabrous, 2.5 mm. long, the glume and sterile lemma equal and slightly exceeding the fruit. **Syntherisma aequiglumis** (Hack. & Arech.) (*Panicum aequiglume* Hack. & Arech. in Arech. Gram. Urug. 93. 1894) differs in having larger spikelets, 3.5 mm. long, the acuminate sparsely pubescent glume and sterile lemma exceeding the fruit by 0.5 mm.

6. **Syntherisma villosa** Walt. Fl. Car. 77. 1788.
Sandy pinales, La Grifa la Catolina, Pinar del Rio, January, *Wright* 3884; Herradura, *Tracy* 9077, 9104.

There are two specimens in the Grisebach Herbarium, one marked "Edge of woods, bushy savannas, Hanabana, May 30," 1865, numbered 173, the other, "Bushy savannas, Hanabana, May 27," 1865. Spikelets about 2 mm. long; plant pubescent or nearly glabrous.

25. VALOTA Adans. Fam. Pl. **2**: 495. 1763.

1. **Valota insularis** (L.) Chase, Proc. Biol. Soc. Wash. **19**: 188. 1906.
Andropogon insulare L. Syst. Nat. ed. 10. **2**: 1304. 1759.
Panicum leucophaeum H. B. K. Nov. Gen. & Sp. **1**: 87. 1816.
Panicum duchaissingii Steud. Syn. Pl. Glum. **1**: 93. 1854.

Santiago de las Vegas, *Baker* HC 602, 1473, *Hitchcock* in 1906; Vento, *Schafer* in 1903; Triscornia, *Tracy* 9083; Herradura, *Tracy* 9050; San Luis, *Pollard & Palmer* 350; Matanzas, *Rugel* 191 in Gray Herbarium; Cienfuegos, *Pringle* 44 and *Combs* 255 in Gray Herbarium; Marianao, *Leon* 306. The following are in the herbarium of the New York Botanical Garden: Santiago de Cuba, *Hamilton* 216, 217, *Underwood & Earle* 165; Matanzas, *Britton & Shafer* 165, *Britton & Wilson* 101; Cedro, *Underwood & Earle* 1536.

In the Grisebach Herbarium is a Wright specimen from eastern Cuba, 1859, numbered 1541.

Steudel's type from "Ins. Guadaloupe Duchaissing" is in the Museum at Paris.

26. ALLOTEROPSIS Presl, Rel. Haenk. 343. *pl. 47*. 1830.[a]

Blades elongated, 30 to 40 cm. long; racemes several in a cluster. 2. *A. dura*.
Blades mostly radical, 10 to 15 cm. long; racemes 1 or 2 ..... 1. *A. amphistemon*.

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[a] The type species is *A. distachya* Presl (op. cit. 344), which is published as coming from Monterey, California, but the type in the National Museum at Prague has two labels, "Peruana montana," and "Regio montana Luzon?" The plant is **Alloteropsis semialata** (R. Br.); *Panicum semialatum* R. Br. Prod. 192. 1810, the type of which is from New Holland. This is not an American species and Presl's type must have come from the Philippines, as indicated by Scribner (Rep. Mo. Bot. Gard. **10**: 37. 1899). Presl's plate and description are incorrect in that the artist incorporated in the drawing of the spikelet of Alloteropsis a spikelet of an Andropogon which had become wedged between the glumes and this is described as a second pair of spikelets. Although Presl's genus is founded upon a misconception there is no doubt as to the identity of the type species. Hence Alloteropsis, the oldest name for this group as segregated from Panicum, is accepted for the genus.

1. **Alloteropsis amphistemon** (Wright).

Panicum amphistemon Wright, Anal. Acad. Cienc. Habana **8**: 207. 1871; Sauv. Fl. Cub. 198.

Wright 3464.

The type of *Panicum amphistemon* Wright is in the Gray Herbarium, *Wright* 3464, labeled "Mayarí-abajo, Aug. 2, in small dense tufts."

2. **Alloteropsis dura** (Griseb.).

Panicum durum Griseb. Mem. Amer. Acad. n. ser. **8**: 533. 1862.

Rocky hills, procumbent in loose tufts, Valestina, September 25, *Wright* 3868; in small tufts on steep hills at the Farallones, N. Sophie, September 29, *Wright* 1539 in the Gray Herbarium.

In the Grisebach Herbarium is the type of *P. durum*, *Wright* 1559 from eastern Cuba in 1859.

27. MESOSETUM Steud. Syn. Pl. Glum. 1: 118. 1854.[a]

Spikelets copiously villous-ciliate ..... 1. *M. rottboellioides.*
Spikelets glabrous or somewhat hispid ..... 2. *M. wrightii.*

1. **Mesosetum rottboelliodes** (H. B. K.).

Panicum rottboellioides H. B. K. Nov. Gen. & Sp. **1**: 96. 1816.

Mesosetum cayennense Steud. Syn. Pl. Glum. **1**: 118. 1854.

Culms scattered, single or few, savannas, Matatoso, August, *Wright* 3449; Herradura, *Baker* HC 2935, *Tracy* 9058, *Hitchcock* in 1906; Isle of Pines, *Curtiss* 396, *Palmer & Riley* 889, 896, *Taylor* 31; Cienfuegos, *Combs* 401 in Gray Herbarium; Sagua, *Britton & Wilson* 336 in Herb. N. Y. Bot. Gard.

The Sauvalle specimen has a second label which reads, "In small tufts, Pinales, Daganiguas, Almacigos Consolacion, Sept." The Grisebach specimen from western Cuba, 1863, is numbered "894=3449." *Wright* 3449 in the Gray Herbarium is from "Savannas, Vueltabajo, July 24."

2. **Mesosetum wrightii** sp. nov.

Culms ascending from a geniculate, rooting or creeping base, slender, glabrous, 20 to 40 cm. long; nodes appressed-hispid; sheaths glabrous below, hispid toward the summit, or the lower hispid throughout, ciliate on the margin; ligule of short bristles; blades flat or somewhat involute on the margins, stiff and thick, yellow-green, hispid below and sparsely so above, remotely papillose-ciliate on the cartilaginous margins, 3 to 6 cm. long, 2 to 3 mm. wide, the uppermost much reduced; spike single, terminating the culm, mostly long-exserted, 2 to 3 cm. long; spikelets subsessile, appressed to the rachis, alternate, 3 to 4 mm. long, the apex of one about reaching the base of the one above on the same side; first glume glabrous, 3-nerved, narrow, acuminate to a blunt point, a little shorter than the second, placed next to the rachis; second glume hispid at the base with a tuft of hairs, sparsely or copiously hispid above, strongly 5-nerved and with some additional striæ, narrowed to a blunt apex; sterile lemma similar, somewhat gibbous below, 7-nerved, its palea obsolete; fertile lemma chartaceous, smooth, and shining, rounded on the back so as to be as thick as wide, about 2 mm. long, extended into a short point, the margins flat, not inrolled; palea similar and included in the margins of the lemma.

Type specimen from Cuba, *Wright* 3859 no. 559961 in the U. S. National Herbarium. The fragmentary specimen in the Sauvalle Herbarium bears the label

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[a] Mesosetum Steud. Flora **33**: 228. 1850, nomen nudum. The type species of Mesosetum is *M. cayennense* Steud., "Leprieur legit. in Cayenne," the type specimen of which, in the herbarium of the Museum at Paris, belongs to the same species as that of *Panicum rottboellioides* H. B. K. in the same herbarium.

"Pinales, Daganiguas, Almicigos, Sept." *Panicum sclerochloa* Trin.[a] (**Mesosetum sclerochloa** (Trin.)) of Brazil, the type of which is in the Trinius Herbarium, differs in having glabrous blades, spikelets 5 mm. long, somewhat scabrous but not hispid, and glumes and lemmas all notched near the apex, hence somewhat 3-lobed. In Sauvalle's Flora Cubana *Wright* 3859 is doubtfully referred to *Panicum sclerochloa* Trin.

28. BRACHIARIA Griseb. in Ledeb. Fl. Ross. 4: 469. 1853.

1. **Brachiaria plantaginea** (Link).

Panicum plantagineum Link, Hort. Berol. **1:** 206. 1827.

Panicum leandri Trin. Icon. 335. 1836.

Paspalum platyphyllum Griseb. Cat. Pl. Cub. 230. 1866.

Panicum platyphyllum Munro; Vasey, U. S. Dept. Agr. Div. Bot. Bull. **8:** 25. 1889.

Brachiaria platyphylla Nash in Small, Fl. Southeast. U. S. 81. 1903.

Wright 3853, 3441; in dense patches in pasture, Sabinilla, June, *Wright* 3867.

The type of Link's species is in the Berlin Herbarium. Wright's 3853 in the Sauvalle Herbarium bears the secondary number 174. In the Grisebach Herbarium are two specimens, the type of *Paspalum platyphyllum* from western Cuba, 1863, numbered "892=3441" and no. 174 labeled, "Damp places in roads and elsewhere, Zarabanda, May 4." This species is placed in the genus Brachiaria because the spikelets are placed with the first glume toward the rachis.

29. HYMENACHNE Beauv. Agrost. 48. *pl. 10. f. 8.* 1812.

Inflorescence spike-like; spikelets 4 mm. long.....1. *H. amplexicaulis.*
Inflorescence of numerous spikes, 1 to 3 cm. long; spikelets 2 to 3 mm. long.....2. *H. auriculata.*

1. **Hymenachne amplexicaulis** (Rudge) Nees, Agrost. Bras. 276. 1829.

Panicum amplexicaule Rudge, Pl. Guian. **1:** 21. 1805.

Panicum hymenachne Desv. Opusc. 82. 1831.

Panicum myuros of authors, not Lam.[b]

Wright 3469; Santiago de las Vegas, *Hitchcock* in 1906; Habana, *Leon* 559; Guines, *Leon* 577.

The specimen in the Grisebach Herbarium is from eastern Cuba, 1860, and is numbered "108=3469." No. 3469 in the Gray Herbarium is from "Margin of Rio Bayamo, Oct. 14."

2. **Hymenachne auriculata** (Willd.) Chase, Proc. Biol. Soc. Wash. **21:** 5. 1908.

Panicum auriculatum Willd.; Spreng. Syst. **1:** 322. 1825.

Wright 3863 in part.

There are three labels with this specimen in the Sauvalle Herbarium, "In ponds, Daganiguas, Sept.," "Wet margin of lagunas, Sta. Cruz de los Piños, Nov. 10," "Low marshy lands, Guanimar, Nov." On the same sheet is a specimen of *Panicum condensum* Nash, and one of *P. laxum* Sw.

The specimen of Hymenachne is fragmentary, but appears to belong to this species. Wright's 3863 in the National Herbarium is mixed with *Panicum laxum* Sw. Wright's 3863 in the Gray Herbarium is mixed with *P. condensum.*

30. SACCIOLEPIS Nash in Britton, Man. 89. 1901.

Spikelets 4 mm. long, on slender pedicels.....2. *S. striata.*
Spikelets 2 to 3 mm. long, subsessile.

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[a] Icon. 283. 1836. [b] See Proc. Biol. Soc. Wash. **21:** 1. 1908.

Spikelets 2 mm. long, panicle dense.....1. *S. myuros.*
Spikelets 3 mm. long, panicle often interrupted.....3. *S. vilvoides.*

1. **Sacciolepis myuros** (Lam.) Chase, Proc. Biol. Soc. Wash. **21:** 7. 1908.
Panicum myuros Lam. Tabl. Encycl. **1:** 172. 1791.
Isle of Pines, *Curtiss* 428.

2. **Sacciolepis striata** (L.) Nash, Bull. Torr. Club **30:** 383. 1903.
Holcus striatus L. Sp. Pl. 1048. 1753.
Panicum gibbum Ell. Bot. S. C. & Ga. **1:** 116. 1816.
On tembladeros[a] in lagunas, Pinar del Rio, December, *Wright* 3885.
The Grisebach specimen is from Hanabana, May 25, 1865, numbered 198. A specimen in the Gray Herbarium is numbered "302=3885."

3. **Sacciolepis vilvoides** (Trin.) Chase, Proc. Biol. Soc. Wash. **21:** 7. 1908.
Panicum vilvoides Trin. Gram. Pan. 171. 1826.
Hymenachne fluviatilis Nees, Agrost. Bras. 273. 1829.
In rivulets, Pinar del Rio, October, *Wright* 3470; Isle of Pines, *Curtiss* 304.
This species is represented in the Grisebach Herbarium by a Wright specimen from western Cuba, 1863, numbered "944=3470." Wright's 3470 in the Gray Herbarium is labeled, "In lagunas, Los Almacigos, Nov. 23," and "On tembladeros[a] in lagunas, Asiento viejo de San Julian, Nov. 30."

31. ECHINOCHLOA Beauv. Agrost. 53. *pl. 11. f. 2.* 1812.

Sheaths hirsute.....3. *E. walteri.*
Sheaths glabrous.
Spikelets pointed but not awned.....1. *E. colona.*
Spikelets awned.....2. *E. crusgalli.*

1. **Echinochloa colona** (L.) Link, Hort. Berol. **2:** 209. 1833.
Panicum colonum L. Syst. Nat. ed. 10. **2:** 870. 1759.
Wright 752; Habana, *Baker* HC 1796, *Leon* 303, *Palmer & Riley* 1137; Santiago de las Vegas, *Baker* HC 502, 4765, *Hitchcock* in 1906; Buena Vista, *Shafer* in 1903; Cerro, *Shafer* 180; Guanabacoa, *Leon* 117 in part; Cabañas, *Palmer & Riley* 756; Cienfuegos, *Pringle* 45; *Combs* 254 in Gray Herbarium; Guines, *Leon* 425. The following are in the herbarium of the New York Botanical Garden: Isle of Pines, *Curtiss* 427; Matanzas, *Britton & Shafer* 509; Cedro, *Underwood & Earle* 1620.
In the Grisebach Herbarium there are two specimens, one from western Cuba, 1863, "946=752," the other numbered 27, collected in 1865.
A specimen in the herbarium of the New York Botanical Garden from Matanzas, *Rugel* 884, is doubtfully referred to *E. colona.* The spikelets have awns 2 to 3 mm. long.

2. **Echinochloa crusgalli** (L.) Beauv. Agrost. 53. 1812.
Panicum crusgalli L. Sp. Pl. 56. 1753.
Santiago, *Linden* 1814 in Leipzig Herbarium; *Rugel* 889 in Grisebach Herbarium; *Wright* in 1865 in Grisebach Herbarium; *Wright* 53 of 1865 in Kew Herbarium; Isle of Pines, *Curtiss* in 1904 in Herb. N. Y. Bot. Gard.; Matanzas, *Britton & Wilson* 175 in Herb. N. Y. Bot. Gard. Wr. 3879 p.p. in Nat. Hb.

3. **Echinochloa walteri** (Pursh) Nash in Britton, Man. 78. 1901.
Panicum walteri Pursh, Fl. Sept. Amer. **1:** 66. 1814.
Low wooded swamps, Hanabana, May 27, *Wright* 3879; *Wright* 160 in Kew Herbarium.

[a] Quaking bogs.

4 Echinochloa spectabilis (Nees) Link

There are two additional labels with *Wright* 3879 in the Sauvalle Herbarium, "Low marshy savannas, Guanimas, Nov.," and "Margin of mangrove swamp, Trinidad, Mar. 13."

32. PANICUM L. Sp. Pl. 55. 1753.

Axis of the panicle branches extending beyond base of uppermost spikelet as a short point or bristle ..... 11. *P. distantiflorum.*

Axis of panicle branches not extended into a bristle.

Inflorescence consisting of several spike-like, more or less secund racemes.

Fruit smooth and shining; spikelets not over 1.5 mm. long. (LAXUM GROUP.)

Rachis pilose; pedicel short, subequal ..... 32. *P. pilosum.*

Rachis not pilose; pedicels unequal, panicle less regular ..... 23. *P. laxum.*

Fruit transversely wrinkled; spikelets turgid. (REPTANS GROUP.)

Nodes bearded ..... 29. *P. numidianum.*

Nodes sometimes pubescent, but not bearded.

Glumes and sterile lemma prominently transversely reticulate-veined ..... 15. *P. fasciculatum.*

Glumes and sterile lemma not cross-veined.

Spikelets hispidulous, pointed, first glume acute ..... 2. *P. adspersum.*

Spikelets glabrous, first glume truncate.

Blades ovate-lanceolate, 5 to 10 mm. wide, 2 to 7 cm. long; prostrate-spreading ..... 35. *P. reptans.*

Blades elongated, 10 to 20 cm. long, narrow; flowering culms erect or ascending; inflorescence of numerous erect-appressed racemes on an elongated axis; spikelets in 2 distinct rows ..... 17. *P. geminatum.*

Inflorescence a more or less diffuse panicle, sometimes narrow and rather compact, but not consisting of spike-like racemes.

Stems woody, resembling bamboos. (DIVARICATUM GROUP.)

Sheaths villous.

Stems tall, blades 1 to 2 cm. wide, not distichous ..... 42. *P. swartzianum.*

Stems creeping, blades distichous, 2 to 3 cm. long, about 5 mm. wide, velvety ..... 36. *P. rugelii.*

Sheaths smooth or pubescent only.

Panicle compact; blades ovate-lanceolate, 1.5 to 4 cm. wide, velvety-puberulent beneath; spikelets globular ..... 8. *P. compactum.*

Panicle open, blades lanceolate.

Stem creeping, sending up erect flowering culms ..... 19. *P. grisebachii.*

Stem climbing or trailing.

Panicle large and spreading, 10 to 20 cm. long; blades 1.5 to 2.5 cm. wide ..... 39. *P. sloanei.*

Panicle small and few-flowered, usually about 5 cm. long; blades usually 5 to 8 mm. wide ..... 12. *P. divaricatum.*

Stems herbaceous.

Fruit transversely rugose ..... 25. *P. maximum.*

Fruit smooth. (See continuation 1.)

(Continuation 1.)

Plants forming a rosette of basal leaves in autumn; early culms simple, with terminal, exserted, many-flowered, spreading panicles; freely branching after maturity of primary panicle, and bearing numerous reduced panicles more or less included in the sheaths. (DICHOTOMUM GROUP.)

Ligule a ring of hairs, 1 mm. or more long; spikelets pubescent, 1 to 1.5 mm. long.

Spikelets hardly 1 mm. long; foliage minutely pubescent, not velvety ..... 48. *P. wrightianum.*

Spikelets 1.5 mm. long.

Foliage smooth or minutely puberulent ..... 24. *P. leucothrix.*

Foliage velvety ..... 1. *P. acuminatum.*

Ligule inconspicuous.

Autumnal state a flat mat or rosette of soft leaves; blades ciliate; spikelets 1.5 to 2 mm. long, glabrous.

Blades pilose on the surface ..... 41. *P. strigosum.*

Blades glabrous on the surface ..... 33. *P. polycaulon.*

Autumnal state erect or spreading.

Sheaths velvety or pilose.

Vernal culms 1 meter or more tall, a viscid ring below each node; primary panicles 10 to 20 cm. long; autumnal blades, 5 mm. or more wide ..... 37. *P. scoparium.*

Vernal culms 20 to 40 cm. tall; primary panicles 2 to 6 cm. long; autumnal blades 1 to 2 mm. wide ..... 6. *P. chrysopsidifolium.*

Sheaths not velvety nor pilose.

Culms wiry, minutely crisp-puberulent; spikelets pyriform-turgid.

Spikelets 1.5 mm. long ..... 31. *P. paucicilliatum.*

Spikelets 2 mm. long ..... 22. *P. lancearium.*

Culms glabrous, or only lowermost internodes pubescent.

Spikelets glabrous, 1.6 mm. long ..... 7. *P. caerulescens.*

Spikelets pubescent.

Nodes bearded; spikelets 2 mm. long ..... 28. *P. nitidum.*

Nodes glabrous or pubescent, not bearded.

Blades long and narrow, autumnal blades involute; spikelets papillose.

Spikelets 2 mm. long, blunt ..... 27. *P. neuranthum.*

Spikelets about 3.5 mm. long, pointed ..... 16. *P. fusiforme.*

Blades not elongated, autumnal blades flat; spikelets not papillose.

Blades with a white-cartilaginous margin, not ciliate; spikelets 1.5 mm. long ..... 44. *P. tenue.*
Blades without white margin, ciliate toward the cordate base; spikelets scarcely over 1 mm. long, suborbicular ..... 13. *P. erectifolium.*

Plants not forming winter rosettes.
Panicles narrow and compact with appressed branches; spikelets glabrous, 1 to 2.5 mm. long.
Culms 1 meter or more tall, compressed at base; panicle 10 to 20 cm. long; spikelets 2.5 mm. long ..... 9. *P. condensum.*
Culms 60 cm. or less tall, stiff and wiry, base not compressed; panicle less than 5 cm. long; spikelets 1 to 2 mm. long.
Spikelets scarcely more than 1 mm. long ..... 40. *P. stenodes.*
Spikelets 2 mm. long ..... 43. *P. tenerum.*
Panicles open, usually diffusely spreading.
Panicle branches in several distinct distant whorls; spikelets short-pediceled, remote along the branches ..... 26. *P. megiston.*
Panicle branches not in distinct whorls.
Spikelets 5 to 6 mm. long, pedicels short and stout; panicle branches few, ascending ..... 49. *P. zizanioides.*
Spikelets less than 5 mm. long, pedicels slender, often capillary.
Plants producing scaly rootstocks.
Blades 5 to 15 cm. long; culms less than 50 cm. tall; a sea-shore grass ..... 34. *P. repens.*
Blades elongated, 20 to 40 cm. long; culms 1 meter or more tall ..... 47. *P. virgatum cubense.*
Plants not producing rootstocks, but culms sometimes decumbent and rooting at base.
Spikelets glutinous, 3 mm. long ..... 18. *P. glutinosum.*
Spikelets not glutinous. (See continuation 2.)

(Continuation 2.)
Spikelets warty-rugose, about 2 mm. long; blades ovate-lanceolate ..... 38. *P. sellovii.*
Spikelets not rugose.
Spikelets pubescent, minute (1 mm. long); blades ovate-lanceolate ..... 46. *P. trichoides.*
Spikelets glabrous.
Spikelets 1.5 mm. long, short-pediceled on the spreading branches of a panicle 2 to 5 cm. long; culms slender, 30 to 50 cm. high, blades 1 to 2 mm. wide. 14. *P. exiguiflorum.*
Spikelets on more or less elongated pedicels.
Culms slender, widely decumbent-spreading; blades elliptic-lanceolate, 1 to 3 cm. long, glaucous ..... 30. *P. parvifolium.*

Culms not slender nor decumbent-spreading.
First glume obtuse or truncate, one-fourth the length of the acuminate spikelet..... 5. *P. chloroticum.*
First glume acute to acuminate, more than one-third the length of the spikelet.
Sheaths glabrous.
Panicle very diffuse, the branches capillary; spikelets less than 1.5 mm. long.....45. *P. tricanthum.*
Panicle scarcely diffuse, the branches not capillary; spikelets 2 mm. or more long.
Culms slender; spikelets 2 mm. long .....10. *P. diffusum.*
Culms tall and stout, 5 to 10 mm. in diameter; spikelets acuminate, about 5 mm. long ..... 3. *P. aquaticum.*
Sheaths hispid.
Annual; panicle branches divaricate ..... 4. *P. cayennense.*
Perennial; panicle branches ascending.
Spikelets 2 mm. long, panicle compact .....20. *P. hirsutum.*
Spikelets 3 mm. long, panicle loose .....21. *P. hirtivaginum.*

1. **Panicum acuminatum** Sw. Prod. 23. 1788.

Panicum comophyllum Nash, Bull. Torr. Club **30:** 380. 1903.

Dry savannas, San Cristobal, August, *Wright* 3874; Herradura, *Baker & Dimmock* HC 4871, *Tracy* 9078, *Hitchcock* in 1906; Pinar del Rio, *Shafer* 320 in part, *Palmer & Riley* 447; Isle of Pines, *Curtiss* 328, 307, *Taylor* in 1901, *Palmer & Riley* 989, 1065, 1083, *Taylor* 33 in Herb. N. Y. Bot. Gard.

The type of *P. acuminatum* at Stockholm is a specimen in the autumnal state. Wright's 3874 in the Gray Herbarium is labeled "Low savannas, Chirigote, Nov. 2." Another specimen in the Gray Herbarium, without number, is from "Savannas, Pueblo Nuevo, San Cristobal, May 16."

2. **Panicum adspersum** Trin. Gram. Pan. 146. 1826.

Wright 3869; Santiago de las Vegas, *Baker* HC 387, 512, 1050, 1825, 2057, *Hitchcock* in 1906, *Tracy* 9109; Triscornia, *Hitchcock* in 1906; Habana, *Curtiss* 748, *Leon* 291, 570; Herradura, *Tracy* 9102; Cabañas, *Palmer & Riley* 746, 771; Matanzas, *Britton, Britton & Shafer* 596. In the Herbarium of the New York Botanical Garden are the following: Isle of Pines, *Curtiss* in 1904; Pinar del Rio, *Shafer* 504.

Wright's specimen in the Sauvalle Herbarium bears the secondary number 304 in addition to the distribution number. Grisebach's specimen bears the secondary number 304 (1865). The specimen in the Gray Herbarium bears the secondary number 269. Trinius's type is from Santo Domingo, sent by Sprengel, and is the plant from which the plate is drawn.[a] The spikelets are about 3 mm. long and sparsely hispidulous. The culms are geniculate and rooting below; the blades spreading and 4 to 8 cm. long. A larger form occurs in Florida, with culms as much as 1 meter high, and blades 15 cm. long and 1.5 cm. wide, the spikelets larger, as much as 4 mm. long. This is represented in Cuba by *Curtiss* 748 and *Palmer & Riley* 771. An examination of considerable material from the West Indies and Flor-

[a] Icon. 169.

ida shows that there are all gradations between these extremes, and there appears to be no constant character by which to separate the larger form as a species or even as a well-marked variety.

3. **Panicum aquaticum** Poir. Encycl. Suppl. 4 : 281. 1816. this is P. dichotomiflorum
Panicum elephantipes Nees, Agrost. Bras. 165. 1829.
San Antonio, *Hitchcock* in 1906, Habana, *Leon* 335.
Poiret's type labeled "Panicum aquaticum enc. suppl. * * * Porto Ricco. h. Poiret" is in the herbarium of Cosson in Paris. Nees's type at Munich agrees with this.

4. **Panicum cayennense** Lam. Tabl. Encycl. **1**: 173. 1791.
Among other tall grasses in low grounds, pinales, Pinar del Rio, September, *Wright* 3865; Herradura, *Tracy* 9073; Isle of Pines, *Curtiss* 267, *Palmer & Riley* 1086, *Taylor* 34.
The Grisebach specimen is from western Cuba, 1863, no. 891. A specimen of this species in the Gray Herbarium, without number, is from "Savannas, Vueltabajo, July 28."

5. **Panicum chloroticum** Nees; Agrost. Bras. 164. 1829. Trin. Gram. Pan. 236. 1826
Punta Brava, *Baker* HC 4054; Santiago de las Vegas, *Hitchcock* in 1906; Batabano, *Hitchcock* in 1906; Herradura, *Hitchcock* in 1906, *Tracy* 9055; *Wright* 3456 and 3860 in National Herbarium in part; *Wright* 3860 in Sauvalle Herbarium; *Wright* 181, 189 in the Grisebach Herbarium; *Wright* 3456 in Sauvalle Herbarium; edge of Lagunas, Pinar del Rio, September, *Wright* 3861.
The first two specimens cited above are like the type at Munich; the others are more or less pubescent, but appear to be otherwise the same. The type of *Panicum proliferum pilosum* Griseb. in the Grisebach Herbarium is labeled "Around lagunas in wet or damp ground, Hanabana, May 16," no. 186. This is the same as *Wright* 3860 in the Sauvalle Herbarium. Probably *P. bartowense* Scribn. & Merr.[a] is a form of *P. chloroticum*. It differs from the Brazilian specimen only in its hispid sheaths and from some of the hispid Cuban specimens only in its larger size. Nash's 567 from Eustis, Florida, is a low spreading form, with culm about 30 cm. long, but the blades and sheaths pubescent like *P. bartowense*. *P. dichotomiflorum* Michx.[b] (*P. proliferum* of American authors, not Lam.), common throughout the eastern United States, is smooth throughout, and is usually more or less geniculate-spreading at base, and the blades are usually long and gradually acuminate. In Florida this shows a tendency to become pubescent. *Combs & Rolfs* 94 from Lake City, Florida, has the habit of *P. dichotomiflorum*, but the blades are pubescent on the upper surface. The spikelets of *P. dichotomiflorum* vary in length from 2 to 3 mm. It would appear that there is one variable species, including *P. dichotomiflorum* Michx., *P. chloroticum* Nees, and *P. bartowense* Scribn. & Merr. The West Indian specimens resemble more closely *P. chloroticum* in habit, and for the present they are referred to this species. Other specimens of the same in the National Herbarium are: Bahamas, Nassau, *Curtiss* 177; Cat Cay, *Brace* 3742. Bermuda: Hamilton, *Millspaugh* 126. Porto Rico: Unado, *Britton & Cowell* 432. South America: Brazil, *Riedel* 959, *Salzmann* (*P. hygrophilum* Salzm.); Paraguay, *Morong* 1002; Uruguay, *Arechavaleta*.
Wright's 3456 and 3861 cited above have larger spikelets than the other Cuban specimens (3 mm. long), but this appears to be a variable character. *Wright* 3456 is the type of *P. proliferum strictum* Griseb.[c] *Wright* 3456 in the Gray Herbarium is from "Lagunas, Almacigos, Nov. 23."

6. **Panicum chrysopsidifolium** Nash in Small, Fl. Southeast. U. S. 100. 1903.
Wright 3453 in part; *Wright* 3454 in part; *Wright* 3461 in part; Herradura, *Hitchcock* in 1906; Consolacion del Sur, *Palmer & Riley* 481; Isle of Pines, *Palmer & Riley* 982.

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[a] U. S. Dept. Agr. Div. Agrost. Circ. **35** : 3. 1901.
[b] Fl. Bor. Amer. **1** : 48. 1803.
[c] Cat. Pl. Cub. 232. 1866.

The Grisebach specimen of *Wright* 3461 also belongs to this species, though it is listed by him under *P. dichotomum* variety *nodiflorum*. Another specimen of this was included by Grisebach under *P. neuranthum;* it is labeled "α forma ascendens ramosa." Wright's 3461 in the Gray Herbarium is part *P. chrysopsidifolium* and part *P. lancearium*. The two labels are, "Sandy pinales, Asiento Viejo de San Julian, Dec. 1," and "Pinal. Mayarí, July 24."

This species is distinguished from *P. neuranthum* by the pubescent culms, bearded nodes, spreading vernal panicles, and short, flat autumnal blades on zigzag stems. The spikelets are 2 mm. long. It occurs in Florida and in Porto Rico (*Heller* 982).

7. **Panicum caerulescens** Hack. in herb.

Vernal form cespitose, of a somewhat glaucous bluish green color; culms erect or ascending, 40 to 75 cm. high, glabrous; sheaths usually less than half as long as the internodes, glabrous or the basal ones sparingly pubescent; blades ascending or spreading, commonly purplish beneath, glabrous or rarely a few hairs around the base, 5 to 8 cm. long, 4 to 7 mm. wide, the margins nearly parallel for two-thirds their length; panicles usually short-exserted, 3 to 7 mm. long, one-half as wide or less, the branches narrowly ascending; spikelets 1.5 to 1.6 mm. long, 0.9 mm. wide, obovoid, blunt, very turgid, glabrous, first glume about one-third the length of the spikelet; second glume and sterile lemma subequal, the glume scarcely as long as the fruit at maturity; fruit 1.4 mm. long, 0.8 mm. wide, ellipsoid.

Autumnal form erect or leaning, sometimes decumbent at base, producing short, densely fascicled branches at the middle and upper nodes, these tufts scarcely as long as the primary internodes, the reduced blades ascending, more or less involute; the reduced panicles with only a lew long-pediceled spikelets.

Closely related to *P. roanokense*, a species of the southern Atlantic coastal plain of the United States, from which it is distinguished by the narrow panicles and smaller spikelets and by the tufted branches of the autumnal form.

The type is *Hitchcock* 706, "In glade among Spartina, etc., stretching up through the tall grass, Miami, Florida, April 3, 1906;" U. S. National Herbarium no. 558380. The name refers to the glaucous blue color.

In marshes and swampy woods, southern Alabama and Florida, Cuba, and the Bahamas.

Wright 3463 in part; Santa Clara, *Britton & Wilson* 316 in Herb. N. Y. Bot. Gard.

Wright's 3463 in the National Herbarium and in the Krug and Urban Herbarium is this species. For other species distributed as 3463, see *P. leucothrix*, *P. wrightianum*, and *P. tenue*.

Bahamas, New Providence, "in fruticetis procumbens," *Eggers* 4305.

8. **Panicum compactum** Sw. Adnot. Bot. 14. 1829.

Eastern Cuba, 1856–57, *Wright* 749; Isle of Pines, *Curtiss* 291, 520, *Palmer & Riley* 904.

This species is distinguished by its broad, usually puberulent blades and compact panicle.

9. **Panicum condensum** Nash in Small, Fl. Southeast. U. S. 93. 1903.

Low savannas, Hanabana, May 19, *Wright* 3862 in part.

In the Grisebach Herbarium there are two specimens of this species. One of them has two labels, "Low wet woods, Hanabana, May 27," no. 184 of 1865, and "Wet—among tall Cyperaceae, in small bunches, Hanabana, May 25." The plant is 3 feet tall, stout, with a compressed base, and narrow compact panicle. The other specimen, which is similar, is labeled, "Palm savannas, Hanabana, May 18," 1865, no. 197. This number of Wright's in the Sauvalle Herbarium and in the National Herbarium is mixed with *P. laxum*. There is a fragment of what appears to be the same, on the sheet of 3863 in the Sauvalle Herbarium. *P. condensum* is common in the southern United States and is found also in the Bahamas (*Curtiss* 174). Wright's 3862 in the

Gray Herbarium consists of *P. condensum* and *P. laxum*. Wright's 3863 in the Gray Herbarium consists of *P. condensum* and *Hymenachne auriculata*.

10. **Panicum diffusum** Sw. Prod. 23. 1788.

Wright 1540; in pastures, Retiro, July, *Wright* 3852; damp savannas, Retiro, October 11, *Wright* 3877; Santiago de las Vegas, *Baker* HC 350, 511, 2052, 2054, *Tracy* 9111, *Wilson* 1405; Habana, *Leon* 190, 305, *Baker*, *Tracy & Hasselbring* HC 3095; Triscornia, *Tracy* 9082; Guanajay, *Palmer & Riley* 802; Isle of Pines, *Curtiss* 384, 494. The following are in the Herbarium of the New York Botanical Garden: Santiago de las Vegas, *Van Hermann* 2444; Sagua, *Britton & Wilson* 314; Madruga, *Britton & Shafer* 649; Matanzas, *Rugel* 907.

A sheet in the National Herbarium of *Wright* 3860 and another marked "Cuba 3860," which appears to be a Wright plant although there is no Wright label, are in part *P. diffusum*. In the Grisebach Herbarium are three specimens marked, respectively, "In the edge of woods and margin of savannas, Hanabana, May 29," 1865, with the secondary number 191; no. 1540 from eastern Cuba, 1859; and "edge of savannas, Hanabana, May 19," in 1865, with the secondary number 190. Wright's 3877 in the Sauvalle Herbarium and in the Torrey Herbarium is part *P. exiguiflorum*.

11. **Panicum distantiflorum** Rich. in Sagra, Hist. Cub. **11:** 304. 1850.

Panicum utawanaeanum Scribn. in Millsp. Field Columb. Mus. Bot. **2:** 25. 1900.

Panicum sintenisii Nash, Bull. Torr. Club **30:** 382. 1903.

Wright 3452; Cojimar, *Baker* HC 267, 2902, *Hitchcock* in 1906; Triscornia, *Tracy* 9089, *Hitchcock* in 1906; Matanzas, *Rugel* 190 in Gray Herbarium, 874 in Herb. N. Y. Bot. Gard.

Grisebach's specimen from eastern Cuba, 1860, is numbered "104=3452." Another specimen, included by Grisebach under *Panicum stenodes*, is labeled, "Bushy savannas, Hanabana, May 16, in small tufts," no. 285. A third specimen, "Savannas of Guamaroca, July 25," no. 284, is also included under *P. stenodes*. A part of *Wright* 3870 in the National Herbarium belongs to this species. The type of Richard's species in the herbarium of the Museum at Paris agrees with Scribner's type from Guanica, Porto Rico,[a] a part of which is in the National Herbarium. Nash's description applies to these specimens and his type (*Sintenis* 3463) was also collected at Guanica, Porto Rico. Sintenis's 3365 and 3416, from Guanica, Porto Rico, also belong to this species.

12. **Panicum divaricatum** L. Syst. Nat. ed. 10. **2:** 871. 1759.

Panicum bambusoides Hamilt. Prod. Ind. Occ. 10. 1826.

Panicum chauvinii Steud. Syn. Pl. Glum. **1:** 68. 1854.

Hillsides, scandent or ascending, Valestina, September 19, *Wright* 748; *Wright* 747; Guanajay, *Baker* HC 4269, El Cangre, *Baker* HC 5198; Cojimar, *Baker* HC 5324, La Magdalena, *Baker* HC 2501, 4611; Habana, *Baker* HC 1837; Triscornia, *Hitchcock* in 1906; Herradura, *Tracy* 9047, 9044; Santiago de Cuba, *Millspaugh* 1015; Baracoa, *Pollard*, *Palmer & Palmer* 76; Isle of Pines, *Millspaugh* 1422, *Palmer & Riley* 1001; Cienfuegos, *Combs* 148 in Gray Herbarium. In the herbarium of the New York Botanical Garden are the following: Managua, *Baker & Wilson* 304; Santiago de Cuba, *Underwood & Earle* 1642; *Taylor* 327; Matanzas, *Britton & Wilson* 241; Isle of Pines, *Curtiss* in 1904.

Widely clambering over bushes. The two specimens of this in Grisebach's herbarium, called by him *P. divaricatum*, are "Prope villam Monte Verde dictam, Cuba orientalis," no. 747, and another labeled 747α. These are both smooth throughout. Besides these there are two specimens with pubescent blades, which Grisebach calls *P. divaricatum* variety *puberulum*.[b] One is labeled "In sylvis densis, Matanzas, Cuba,

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[a] Millspaugh, Plantae Utawanae no. 702.

[b] Griseb. Fl. Brit. W. Ind. 551. 1864.

Rug. 187;" the other is *Wright* 748 from eastern Cuba. The type collected by March in Jamaica is also here. Another specimen (*Wright*, western Cuba in 1863) is marked by Grisebach as *β stenostachyum*. These last two specimens appear to be the ordinary form of *P. divaricatum*. The pubescent form can scarcely be separated even as a variety.

Hamilton's species is based on "*P. bambusoides* Herb. Prof. Desv. Porto Rico." A specimen so marked in the Desvaux Herbarium in the Museum at Paris is *P. divaricatum*. The type of *P. chauvinii* Steud. is also in the Museum at Paris.

13. **Panicum erectifolium** Nash, Bull. Torr. Club **23:** 148. 1896.

Panicum sphaerocarpon floridanum Vasey, U. S. Dept. Agr. Div. Bot. Bull. **8:** 33. 1889, not *P. floridanum* Trin. 1835.

Wright 3462.

The specimen in the Grisebach Herbarium is from western Cuba, 1862, and is numbered "896=3462." The specimen in the Gray Herbarium is labeled "Lagunas, Vueltabajo, July 24."

14. **Panicum exiguiflorum** Griseb. Cat. Pl. Cub. 234. 1866.

Panicum minutiflorum Rich. in Sagra, Hist. Cub. **11**: 305. 1853, not Rasp. 1825.

Panicum tricolor Hack. Oesterr. Bot. Zeitschr. **51:** 370. 1901.

Wright 755, 3450, 3877 in part, 756 in Gray Herbarium; Pinar del Rio, *Earle & Wilson* HC 1550; Herradura, *Tracy* 9075, *Hitchcock* in 1906; La Magdalena *Baker* 1; Isle of Pines, *Taylor* 35. The following are in the Herbarium of the New York Botanical Garden: Isle of Pines, *Taylor* 35, *Curtiss* in 1904; Madruga, *Shafer* 452.

Wright's 3450 in the National Herbarium is labeled "Low savannas, Chirigote, Oct. 26;" the same number in the Gray Herbarium, "Pinales, Almacigos, July 26." The type in the Grisebach Herbarium is labeled "In bushy savannas, Hanabana, May 16," 1865. The type of Richard's species is at Paris. Grisebach has two other specimens of this, one from western Cuba, 1863, numbered "909=3450," which is the type of his *P. laxum* variety *variegatum*,[a] and the other, also from western Cuba, numbered "89=3450." Wright's 755, "Pinales, San Juan de Buena Vista, Nov. 21, 1860–64," and no. 756, from eastern Cuba in 1856–57, both in the Gray Herbarium, are *P. exiguiflorum*.

The type of *Panicum tricolor*, *Eggers* 3978, from Fortune Island, Bahamas, was examined at Hackel's herbarium.

15. **Panicum fasciculatum** Sw. Prod. 22. 1788.

Panicum fuscum Sw. Prod. 23. 1788.

Panicum flavescens Sw. Prod. 23. 1788.

Panicum illinoniense Desv. Opusc. 91. 1831.

Santiago de las Vegas, *Van Hermann* HC 2445, *Baker* HC 2678, 5110, *Wilson* 593; La Magdalena, *Baker* HC 3636; Herradura, *Tracy* 9091; Cienfuegos, *Pringle* 74, 124, *Combs* 252 in Gray Herbarium; *Rugel* 881 in Gray Herbarium; Habana, *Leon* 573. In the herbarium of the New York Botanical Garden are the following: Santiago de Cuba, *Taylor* 28; Baracoa, *Underwood & Earle* 839; Santiago de las Vegas, *Van Hermann* 2698b.

This appears to be a recent introduction into Cuba, where it occurs as a weed. The type specimens of Swartz's three species differ only as to size of panicle.

The specimen in the Grisebach Herbarium is from eastern Cuba in 1859 and is numbered 754. Wright's 754 in Gray Herbarium is from "Roadsides near Saltadero, Aug. 4," Monte Verde, 1859.

The published source of *P. illinoniense* Desv. is "America boreali." The specimen in Desvaux's herbarium in the Museum at Paris, marked with this name in Desvaux's handwriting, is *P. fasciculatum* Sw. The sheet is also marked "hab. Carol." The locality is clearly an error.

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[a] Cat. Pl. Cub. 233. 1866.

16. **Panicum fusiforme** nom. nov.

Panicum neuranthum ramosum Griseb. Cat. Pl. Cub. 232. 1866, not *P. ramosum* L. 1767.

Pine woods, Las Oblas, Pinar del Rio, September, *Wright* 3453 in part; *Wright* 3454 in part; Herradura, *Tracy* 9074, *Hitchcock* in 1906, *Baker & Dimmock* HC 4846, *Caldwell & Baker* 7139; Isle of Pines, *Curtiss* 406.

There has been much confusion in the specimens distributed by Wright unde numbers 3453, 3454, and 3461. The Grisebach specimen of the above species, which is the type of his variety, is labeled "Cuba occ. Wr. 1863, 900=3454." No. 3453 is *P. neuranthum*. As distributed in various herbaria, however, *P. fusiforme* occurs in part of nos. 3453, 3454, and 3461. With these are various mixtures of *P. neuranthum*, *P. paucicilliatum*, and *P. lancearium*.

17. **Panicum geminatum** Forsk. Fl. Aegypt. Arab. 18. 1775.

Panicum paspalodes Pers. Syn. **1:** 81. 1805.

Panicum brizoides Lam. Tab. Encycl. **1:** 170. 1791, not L. 1771.

Wright 761; Santiago de las Vegas, *Hitchcock* in 1906; Batabano, *Hitchcock* in 1906; Cienfuegos, *Combs* 426 in Gray Herbarium; Isle of Pines, *Curtiss* in 1904 in Herb. N. Y. Bot. Gard.

No. 761 of *Wright* in the National Herbarium is labeled "Wet, around ponds, Hanabana, June 5." The Grisebach specimen is from eastern Cuba in 1860 and is labeled "Bunches beside water holes. Palma Sola, July 19. 99=761." Persoon's name is based on *Panicum brizoides* Lam., as he quotes Lamarck's diagnosis and cites his name as synonym. At Florence there is an authentic specimen of this sent by Lamarck, collected in Mauritius by Commerson. The specimen of *Panicum brizoides* in the Linnæan Herbarium is *Echinochloa colona* (L.) Link. Doell[a] takes up *Paspalum appressum* Lam. Tabl. Encycl. 176. 1791, transferring it to Panicum, but this is invalidated by *Panicum appressum* Forsk. Fl. Aegypt. Arab. 20. 1775, and by *P. appressum* Kunth, Enum. **1:** 84. 1833.

18. **Panicum glutinosum** Sw. Prod. 24. 1788.

Panicum obtusiflorum Rich. in Sagra, Hist. Cub. **11:** 305. 1850.

Panicum lindenii Griseb. Cat. Pl. Cub. 233. 1866.

Shady hills, Loma Pelada, December 12, *Wright* 757; *Linden* 2143 in Paris Herbarium. Wright's 757 in the Gray Herbarium is from "La Perla, along roadsides." The Grisebach specimen is from eastern Cuba, no. 757. *P. lindenii* Griseb. is a typonym of *P. obtusiflorum* Rich., both being based on *Linden* 2143, which is in the Paris Herbarium.

19. **Panicum grisebachii** Nash, Bull. Torr. Club **35:** 301. 1908.

Mountain woods, creeping-assurgent, Valestina, October 8, *Wright* 3457; Madruga, *Britton, Britton & Shafer* 758; San Antonio de los Baños, *Baker* HC 2853, *Hitchcock* in 1906; Pinar del Rio, *Baker* HC 3817; Matanzas, *Rugel* 187 in Herb. N. Y. Bot. Gard.

The main stem creeps along the ground, throwing up flowering branches a foot or so high. There are two Wright specimens of this in the Grisebach Herbarium, both from western Cuba, 1863, one numbered "889=3457," the other "941=3457."

20. **Panicum hirsutum** Sw. Fl. Ind. Occ. **1:** 173. 1797.

Wet ground near Matanzas, July 5, *Wright* 297 in 1865 in Grisebach Herbarium.

A large stout grass with hirsute sheaths, glabrous blades, large, rather compact panicle, and spikelets about 2 mm. long, being similar to the type at Stockholm. In the herbarium of the New York Botanical Garden are two other West Indian specimens of this species: Martinique, *Duss* 768; Guadaloupe, *Duss* 3917.

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[a] In Mart. Fl. Bras. **2**[2]: 184. 1877.

21. **Panicum hirtivaginum** sp. nov.

Culm erect (apparently from a perennial base), ascending-hirsute, 60 to 80 cm. tall, the nodes densely hirsute; sheaths hirsute like the culms; ligule bristly; blades flat, hirsute on both surfaces or glabrescent, scarcely scabrous on the margins, elongated, erect or ascending, as much as 60 cm. long, and 12 mm. wide; panicle diffuse, 20 to 30 cm. long, branches ascending, these and the main axis glabrous or somewhat scabrous; spikelets on pedicels 1 to 3 mm. long, ovate-acuminate, glabrous, about 3 mm. long; lower glume ovate, strongly 5-nerved, somewhat over 1 mm. long; upper glume and sterile lemma equal, strongly 7 and 9-nerved, the palea of the latter delicate, about half as long; fertile lemma chartaceous, smooth, acute, nearly 2 mm. long, inrolled at the margins and including the margins of the palea; fruit brown at maturity.

Type specimen *Wright* 758, Cuba, U. S. National Herbarium no. 559958. Other specimens are: Santiago de las Vegas, *Tracy* 9116; Habana, *Tracy* 9068; *Wright* 3860 in Gray Herbarium; Cienfuegos, *Combs* 259 in Gray Herbarium. In the herbarium of the New York Botanical Garden are: Santiago de Cuba, *Hamilton* 230; Alto Cedro, *Underwood & Earle* 1611; Madruga, *Britton & Shafer* 745; *Eggers* 5406.

Wright's 758 is listed in Sauvalle's Flora Cubana as *P. rudgei* Roem. & Schult., which species apparently does not occur in Cuba. The two specimens of *Wright* 758 in the Sauvalle Herbarium are labeled "In low ground beside rivulets, savannas of Guamaroca, July 25," and "In fields, Retiro, Oct. 11." The Grisebach specimen of this species is numbered 281 and was collected in 1865.

This species differs from *P. hirsutum* Sw. in its smaller culms, hirsute blades, more diffuse panicle, and larger spikelets.

22. **Panicum lancearium** Trin. Clav. Agrost. 234. 1822.

Panicum nashianum Scribn. U. S. Dept. Agr. Div. Agrost. Bull. **7:** 79. 1897.

Wright 3460; *Wright* 3461 in part.

Wright's 3460 and 3461 in part, in the Krug and Urban Herbarium belong to this species. There is a specimen of this in the Grisebach Herbarium from eastern Cuba, numbered "101=3460" and labeled "*Panicum dichotomum* var. *nodiflorum* Lam. forma *glabresc.*" Wright's 3460 in the Gray Herbarium is labeled "Pinal. San Juan de Buenavista, Nov. 21."

23. **Panicum laxum** Sw. Prod. 23. 1788.

Panicum agrostidiforme Lam. Tabl. Encycl. **1:** 172. 1791.

Panicum tenuiculmum Meyer, Prim. Fl. Esseq. **58:** 1818.

Panicum polygonatum Schrad. in Schult. Mant. **2:** 256. 1824.

Panicum diandrum Kunth, Rev. Gram. **2:** 323. 1829.

Panicum ramuliflorum Hochst.; Steud. Syn. Pl. Glum. **1:** 65. 1854.

Wright 759, 3856, 3862 in part, 3863 in part; Santiago de Las Vegas, *Tracy* 9114, *Hitchcock* in 1906; Guanabacoa, *Leon* 190; Las Acostas, *Baker* HC 5240; Province Santa Clara, *Baker* HC 2477, 2482; Isle of Pines, *Palmer & Riley* 1069, *Taylor* 37, *Curtiss* 464; Herradura, *Hitchcock* in 1906, *Tracy* 9059, 9062, 9072, 9099, *Caldwell & Baker* 7136; Pinar del Rio, *Baker* HC 1699; Cienfuegos, *Combs* 321 in Gray Herbarium. The following are in the Herbarium of the New York Botanical Garden: Pinar del Rio, *Shafer* 323; Isle of Pines, *Curtiss* in 1904; Sagua, *Britton & Wilson* 300; Guajay, *Earle & Wilson* 343.

Wright's 759 in National Herbarium is labeled "Savannas, Retiro, Oct. 11." There are four specimens in the Grisebach Herbarium: Western Cuba, collected in 1863, "893=759;" eastern Cuba, 1859, no. 759; "Hanabana, May 22, 1865, 189;" "Wet—among tall Cyperaceae, Hanabana, May 25, 1865, 196." Wright's 3862 in the Gray Herbarium consists of two specimens, one of which is *P. laxum*, the other *P. condensum*. Wright's 759 in the Gray Herbarium has three printed blank labels, for the years 1856–57, 1859, and 1860–64.

The type of *P. agrostidiforme* Lam. was examined at the Lamarck Herbarium in the Museum at Paris; those of *P. polygonatum* Schrad. and *P. diandrum* Kunth at Halle, among specimens loaned to Professor Mez by the Berlin Herbarium. A specimen of *P. tenuiculmum* from Meyer is in the Trinius Herbarium; the type of *P. ramuliflorum* Hochst. ("Pl. *Kappler* surin. nr. 1523") is in the Herbarium at Munich. All these agree with Swartz's type.

24. **Panicum leucothrix** Nash, Bull. Torr. Club **24:** 41. 1897.

Herradura, *Hitchcock* in 1906.

In the Grisebach Herbarium is a specimen of this from western Cuba, 1863, numbered "923=3463." For other species distributed as 3463, see *P. wrightianum*, *P. tenue*, and *P. caerulescens*.

25. **Panicum maximum** Jacq. Coll. **1:** 76. 1786.

Panicum laeve Lam. Tabl. Encycl. **1:** 172. 1791.

Panicum trichocondylum Steud. Syn. Pl. Glum. **1:** 74. 1854.

Santiago de las Vegas, *Wilson* 438, *Baker & Wilson* 682, *Hitchcock* in 1906; Madruga, *Shafer;* Guanabacoa, *Leon* 189; Guanajay, *Palmer & Riley* 816; San Diego de los Baños, *Palmer & Riley* 542, 545; El Guama, *Palmer & Riley* 178; Pinar del Rio, *Wilson* 1770, *Palmer & Riley* 377; Herradura, *Hitchcock* in 1906; Santiago de Cuba, *Pollard, Palmer & Palmer* 283; Cienfuegos, *Combs* 294 in Gray Herbarium; Guines, *Leon* 427. In the Herbarium of the New York Botanical Garden are: Santiago de Cuba, *Underwood & Earle* 162; Matanzas, *Britton & Shafer* 113.

The type of *P. laeve* Lam., labeled "de Ste. Dominique" in the Lamarck Herbarium and that of *P. trichocondylum* Steud., labeled "Ins. Guadaloup. Duchaissing" are in the Museum at Paris.

Cultivated for forage and frequently escaped into waste land.

26. **Panicum megiston** Schult. Mant. **2:** 248. 1824.

Panicum altissimum Meyer, Prim. Fl. Esseq. 63. 1818, not Brous. 1805.

On tembladeros in lagunas, St. Cruz de los Piños, July, *Wright* 3872.

27. **Panicum neuranthum** Griseb. Cat. Pl. Cub. 232. 1866.

Wright 3453 in part.

The type specimen in the Grisebach Herbarium is from eastern Cuba, 1860, numbered "103=3453." The specimen in the Gray Herbarium is labeled, "Cuchillos de Baracoa, June 20." This species is distinguished from others of the Angustifolium group by the smooth culms and nodes, involute blades, and narrow panicles, and by spikelets 2 mm. long. *P. neuranthum* also occurs in southern Florida: Sanibel Island, *Simpson* 298; Braidentown, *Tracy* 6711; Clearwater, *Tracy* 7166; *Rugel* 290; Miami, *Hitchcock* 705, 710; Alligator Harbor, *Tracy* 7176.

28. **Panicum nitidum** Lam. Tabl. Encycl. **1:** 172. 1791.

Panicum subbarbulatum Scribn. & Merr. U. S. Dept. Agr. Div. Agrost. Circ. **29:** 9. 1901.

Wright 3459.

The specimen in the Sauvalle Herbarium is fragmentary, but the specimen in the Kew Herbarium is more complete. Wright's 3459 in the Gray Herbarium is partly this and partly *P. parvifolium*.

29. **Panicum numidianum** Lam. Tabl. Encycl. **1:** 172. 1791.

Panicum barbinode Trin. Mem. Acad. Petersb. VI. 3^2: 256. 1835.

Panicum equinum Salzm.; Steud. Syn. Pl. Glum. **1:** 67. 1854.

Wet places in savannas, Pinar del Rio, October, *Wright* 1545; Puentes Grandes, *Leon* 283; Cienfuegos, *Pringle* 26, Habana, *Leon* 568. The following are in the herbarium of the New York Botanical Garden: Santiago de Cuba, *Underwood & Earle* 163; Matanzas, *Britton & Shafer* 512; *Eggers* 4870.

The Grisebach specimen is from eastern Cuba, 1859, no. 1545. This species has been referred to *P. molle* Sw., but the latter is a quite different Brazilian species. It may be that *P. muticum* Forsk.[a] is an older name for this species.

Salzmann's specimen from Bahia, upon which *Panicum equinum* is based, is in the herbarium of Professor van Heurck at Antwerp; a duplicate is in the herbarium at Florence. The specimen from *Reugger*, Paraguay, also cited by Steudel, is in the herbarium of the Museum at Paris, and also belongs to this species.

30. **Panicum parvifolium** Lam. Tabl. Encycl. **1:** 173. 1791.

Wright 3458; Herradura, *Tracy* 9060, 9079, *Hitchcock* in 1906, *Shafer;* Pinar del Rio, *Shafer* 430 in Herb. N. Y. Bot. Gard.

The Grisebach specimens are from western Cuba, 1863, numbered, "901=3458" and "927=3458." This is listed by Grisebach[b] as *P. cyanescens*. The type of *P. parvifolium* is in the Lamarck Herbarium at Paris. *Wright* 3458 in the Gray Herbarium is labeled "In lagunas (ponds) Los Almacigos, July 28," and "On tembladeros in lagunas, Asiento Viejo de San Julian, Nov."

31. **Panicum pauciciliatum** Ashe, Journ. Elisha Mitch. Soc. **16:** 87. 1900.

On crumbling banks, Loma Pelada, November 20, *Wright* 3876.

There is some material of this species mixed with *Wright* 3461 in the Krug and Urban Herbarium. This species occurs also in Porto Rico (*Heller & Heller* 982b, 639, *Underwood & Griggs* 955),and is common in the Atlantic coastal plain of the southern United States.

32. **Panicum pilosum** Sw. Prod. 22. 1788.

Panicum distichum Lam. Encycl. **4:** 731. 1797.

Panicum pilisparsum Meyer, Prim. Fl. Esseq. 57. 1818.

Wright 3457; Herradura, *Van Hermann* HC 763, *Tracy* 9063; Isle of Pines, *Curtiss* 305, *Taylor* 36 in Gray Herbarium.

There seems to be an error in the number of the Wright specimen. It is published as 3451 in Grisebach's catalogue and in Flora Cubana, and the specimen is so numbered in the Kew and the Grisebach herbaria, but in the Sauvalle and the Berlin herbaria the number is 3457. The Grisebach specimen is from western Cuba, 1863, numbered "888=3451."

The hairs on the rachis are variable. Curtiss's 305 in the National Herbarium is without hairs; the same number in the herbarium of the Cuba Experiment Station has hairs on some of the spikes. Wright's 3451 in the Gray Herbarium is from "Retiro, July 15, in woods (damp)."

33. **Panicum polycaulon** Nash, Bull. Torr. Club **24:** 200. 1897.

Wright 3875 in National Herbarium; Herradura, *Hitchcock* in 1906; *Shafer* 480 in Herb. N. Y. Bot. Gard.; Isle of Pines, *Palmer & Riley* 990.

34. **Panicum repens** L. Sp. Pl. ed. 2. 87. 1762.

Habana, *Leon* 296, 563.

35. **Panicum reptans** L. Syst. Nat. ed. 10. **2:** 870. 1759.

Panicum grossarium L. op. cit. 871.

Panicum caespitosum Sw. Fl. Ind. Occ. **1:** 140. 1797.

Panicum prostratum Lam. Tabl. Encycl. **1:** 171. 1791.

Panicum insularum Steud. Syn. Pl. Glum. **1:** 160. 1854.

Wright 762, 763, 3857; Habana, *Leon* 276, 292, 297, 566, 576, *Curtiss* 691, *Hitchcock* in 1906; San Antonio, *Hitchcock* in 1906; Baracoa, *Pollard, Palmer & Palmer* 19; Madruga, *Curtiss* 536; Colon, *Baker* HC 3588; Herradura, *Tracy* 9103; Cienfuegos, *Pringle* 73; *Combs* 253 in Gray Herbarium; Yumury Valley, *Rugel* 1985 in Gray Herbarium. The following are in the herbarium of the New York Botanical Garden: La Magdalena, *Earle & Baker* 2455; Baracoa, *Underwood & Earle* 1391; Yumury Mountains, *Rugel* 195.

[a] Fl. Aegypt. Arab. 20. 1775.

[b] Cat. Pl. Cub. 233. 1866.

The Grisebach specimen from eastern Cuba, 1860, is numbered "105=762." The types of the above synonyms are all identical.[a] The West Indian grass commonly known as *P. grossarium* is *P. adspersum* Trin.

The type of *Panicum insularum* Steud. labeled "Antillae minores, Hohenacker" is in the Museum at Paris.

36. **Panicum rugelii** Griseb. Cat. Pl. Cub. 233. 1866.

Shady woods, Valestina, September 27, *Wright* 3465; Pinar del Rio, *Baker* HC 3790; San Antonio, *Hitchcock* in 1906; Matanzas, *Britton & Shafer* 106 in Herb. N. Y. Bot. Gard.

Creeping flat along the surface of the ground in shady woods, the leaves distinctly dorso-ventral, more or less pubescent. In the Grisebach Herbarium is *Rugel* 188 from Matanzas, the type specimen, and *Wright* 3465. A duplicate type is in the Gray Herbarium.

37. **Panicum scoparium** Lam. Encycl. **4:** 444. 1797.

Panicum viscidum Ell. Bot. S. C. & Ga. **1:** 123. 1816.

Wright 3467.

The specimen with this number in the Grisebach Herbarium is the same. The specimen in the Gray Herbarium is labeled "In loose bunches, road to Pinal Mayarí, Aug. 4."

38. **Panicum sellovii** Nees, Agrost. Bras. 153. 1829.

Panicum lasianthum Trin. Icon. 245. 1835.

Panicum valenzuelanum Rich. in Sagra, Hist. Cuba **11:** 304. 1850.

Wet savannas, Hanabana, May 17, *Wright* 3462; *Wright* 3455; edge of thickets in pinales, Pinar del Rio, September, *Wright* 3855; *Shafer* 561 in Herb. N. Y. Bot. Gard.; Herradura, *Tracy* 9098, *Hitchcock* in 1906.

Grisebach's specimen, which is from western Cuba, 1863, and is numbered "935=3455," is the type of *P. rugulosum hirtiglume* Griseb.[b] Wright's 3855 in the Sauvalle Herbarium has a second label which reads, "Low, wet ground beside rivulets, Pinar del Rio, Oct." Wright's 3455 in the Gray Herbarium is labeled "Pinales, La Catalina, Sept. 11," and "Pinal, Rangel, Aug. 6." *P. rugulosum* Trin.[c] has glabrous spikelets. This has not been found in Cuba. The type of *P. sellovii* in the Berlin Herbarium agrees with the type of *P. lasianthum* in the Trinius Herbarium. In the latter herbarium is also a portion of the type of *P. sellovii*. The type of Richard's species is at Paris.

39. **Panicum sloanei** Griseb. Fl. Brit. W. Ind. 551. 1864.

Hillsides, scandent or trailing, Valestina, September 27, *Wright* 3878; near Habana, *Britton & Shafer* 115, 759, Guanajay, *Baker* HC 4587, 4592; San Antonio, *Hitchcock* in 1906; Cienfuegos, *Combs* 55 in Gray Herbarium; *Rugel* 872 in Gray Herbarium. The following are in the herbarium of the New York Botanical Garden: Matanzas, *Britton & Wilson* 121, 393; *Rugel* 868; Santiago de Cuba, *Taylor* 328; Madruga, *Britton & Shafer* 759; Isle of Pines, *Taylor* 22.

Leaf blades larger and broader and panicle larger and more widely spreading than in *P. divaricatum*. In the Grisebach Herbarium are two specimens, "In sylvis densis, Matanzas, *Rugel* 872," and "Woods, Hanabana, June 17, 1865," *Wright* 269. A specimen in the herbarium of the New York Botanical Garden from Matanzas (*Britton & Shafer* 586) is doubtfully referred here.

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[a] For a discussion see Contr. Nat. Herb. **12:** 119. 1908.

[b] Cat. Pl. Cub. 233. 1866.

[c] Gram. Pan. 195. 1826.

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40. **Panicum stenodes** Griseb. Fl. Brit. W. Ind. 547. 1864.

Low, wet pine woods, El Salado, August, *Wright* 3871; Herradura, *Hitchcock* in 1906, *Baker & Abarca* HC 4192, *Baker* HC 2956, Habana, *Leon* 567; Isle of Pines, *Curtiss* in 1904 in Herb. N. Y. Bot. Gard.

The Grisebach specimen is labeled "Sandy ground in the Cienaga, Hanabana, May 17," no. 192. Two other specimens, 284 and 285, included by Grisebach in this cover, are *P. distantiflorum*. *P. caricoides* Nees[a] differs in having larger spikelets (2 mm. long) with bristles at apex of pedicel, and flat blades, villous on upper surface, as shown by the type in the Munich Herbarium and a portion in the Trinius Herbarium.

41. **Panicum strigosum** Muhl.; Ell. Bot. S. C. & Ga. **1:** 126. 1816.

Savannas around base of palms, Daganiguas, September, *Wright* 3875; El Guama, *Palmer & Riley* 213.

Wright's 3875 in the National Herbarium is *P. polycaulon*.

42. **Panicum swartzianum** Hitchc. Contr. Nat. Herb. **12:** 140. 1908.

Panicum lanatum Sw. Prod. 24. 1788, not Rottb. 1776.

Santiago de Cuba, *Hamilton* 218 in Herb. N. Y. Bot. Gard.

43. **Panicum tenerum** Beyrich; Trin. Mem. Acad. Petersb. VI. **3:** 341. 1835.

In dense bunches in dried-up ponds, Pinar del Rio, December, *Wright* 188; Herradura, *Baker & Dimmock* HC 4837, *Hitchcock* in 1906, *Tracy* 9080; "a tall branching grass in deepish water of lagunas, Pinar del Rio, Sept.," *Wright* 3870 in National Herbarium.

Wright's 188 is mixed with *P. distantiflorum* and has, in addition to the label quoted, another, "Savannas of Guamaroca, July 28." Wright's 3870 is also mixed with *P. distantiflorum*. The Florida specimens of *P. tenerum* have been going under the name of *P. stenodes*. Wright's 3860 in the Gray Herbarium is *P. tenerum*.

44. **Panicum tenue** Muhl. Gram. 118. 1817.

Panicum albomarginatum Nash, Bull. Torr. Club **24:** 40. 1897.

Sandy pine woods, Pinar del Rio, September, *Wright* 3463 in part; Herradura, *Shafer* 560, *Baker* HC 2967, 2973, 2977, *Hitchcock* in 1906; Pinar del Rio, *Shafer* 320 in part; Isle of Pines, *Taylor* 32.

For other specimens distributed as *Wright* 3463, see *P. caerulescens*, *P. leucothrix*, and *P. wrightianum*.

45. **Panicum tricanthum** Nees, Agrost. Bras. 210. 1829.

Wright 753; Habana, *Curtiss* 598; Vento, *Leon* 557.

No. 753 of Wright in the National Herbarium is labeled "In large, loose bunches beside the river Agabama Guinia, Trinidad, May 5." The specimen in the Grisebach Herbarium is from western Cuba, 1863, and is numbered "948=753." In the Gray Herbarium there are two specimens, "Villa Clara, Macagua, Jan. 21," 1860–64, and "Santa Isabel, along rivulets," eastern Cuba, in 1856–57.

46. **Panicum trichoides** Sw. Prod. 24. 1788.

Prope villam Monte Verde dictam, Cuba Orientali, 1859, *Wright* 1538, in Gray Herbarium; Habana, *Curtiss* 714, *Britton & Wilson* 510; Guanabacoa, *Leon* 206.

A weed in cultivated soil. *P. brevifolium* L., to which our species has been referred, is from India (*P. ovalifolium* Poir. as described in Hooker's Flora of British India).

47. **Panicum virgatum cubense** Griseb. Cat. Pl. Cub. 233. 1866.

Panicum virgatum obtusum Wood, Bot. & Flor. 392. 1874.

Panicum virgatum breviramosum Nash, Bull. Torr. Club **23:** 150. 1896.

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[a] Trin. Gram. Pan. 149. 1826.

Marshes, Hanabana, May 27, *Wright* 3873; Batabano, *Baker* HC 2763, *Hitchcock* in 1906, *Palmer & Riley* 1134.

Wright's specimen in the Sauvalle Herbarium has also the secondary number 183. In the Grisebach Herbarium this occurs with the number 183 and is labeled *Panicum virgatum* variety *cubense*, "Low savannas, Hanabana, May 19." This form is characterized by the more obtuse spikelets, narrower panicle, and culms solitary or few in a clump.

48. **Panicum wrightianum** Scribn. U. S. Dept. Agr. Div. Agrost. Bull. **11**: 44. 1898.

Panicum minutulum Desv. Opusc. 87. 1831, not Gaud. 1826.

Wright 3463 in National Herbarium.

There is a specimen of this species in the Grisebach Herbarium from western Cuba, 1863, numbered "895=3463," and bearing the note "Spiculis puberulis." Wright's 3463 in the Boissier and in the Kew Herbarium consists of this species and *P. leucothrix*. It is to be noted that *P. tenue* and *P. caerulescens* are also distributed in various herbaria as *Wright* 3463. Wright's 3463 in the Gray Herbarium is labeled "Lagunas, Vueltabajo, July 24." The sheet also bears a small plant of *P. leucothrix*.

49. **Panicum zizanioides** H. B. K. Nov. Gen. & Sp. **1**: 100. 1816.

Panicum oryzoides Sw. Prod. 23. 1788, not Ard. 1764.

Wright 3466; Laguna Castellano, *Baker* HC 4335.

Grisebach's specimen of *Wright* 3466 is also without locality.

33. ICHNANTHUS Beauv. Agrost. 56. *pl. 12. f. 1.* 1812.

Blades, especially those of sterile shoots, contracted into petiole-like bases, as much as 1 cm. long.....4. *I. wrightii.*

Blades not contracted into petiole-like bases.

First glume as long as spikelet; stem creeping, blades ovate.....2. *I. nemorosus.*

First glume one-half to three-fourths as long as spikelet; stem ascending.

Blades narrowly linear-lanceolate, thick and firm.....1. *I. mayarensis.*

Blades ovate-lanceolate, thin, usually 10 to 15 mm. wide...3. *I. pallens.*

1. **Ichnanthus mayarensis** (Wright).

Panicum mayarense Wright, Anal. Acad. Cienc. Habana **8**: 206. 1871; Sauv. Fl. Cub. 197.

Pinales de Mayarí, July 24, and Mayarí Abajo, August 2 (1860–64), *Wright* 3468 in Gray Herbarium.

This species is represented by two sheets, as noted above, the second of which, marked Mayarí Abajo, is the type, as this locality agrees with that published. This number has been found in no other herbarium. The fertile lemma is slightly over 2 mm. (2.2 mm.) long, and the margins do not meet except at the tip, thus exposing a narrow strip of the palea. The scars at the base are small and the wings are wanting.

2. **Ichnanthus nemorosus** (Sw.) Doell in Mart. Fl. Bras. **2**^{2}: 289. 1877.

Panicum nemorosum Sw. Prod. 22. 1788.

In dense woods, Retiro, November 20, *Wright* 3881; damp woods near the Mogote de Mono, October 8, *Wright* 3882; shady banks of Rio Sico in Arroyo Hondo, Pinar del Rio, December, *Wright* 3858.

3. **Ichnanthus pallens** (Sw.) Munro; Benth. Fl. Hongk. 414. 1861.

Panicum pallens Sw. Prod. 23. 1788.

Wright 750; El Guama, *Palmer & Riley* 130,.218; Baracoa, *Pollard, Palmer & Palmer* 15. The following are in the herbarium of the New York Botanical Garden: Santiago de Cuba, *Taylor* 385, 526, *Hamilton* 215; Baracoa, *Underwood & Earle* 267; El Sigual, *Eggers* 4661.

There are four specimens of this in the Grisebach Herbarium: No. 750 labeled "Prope villam Monte Verde dictam. Cuba orientali;" another numbered 750 from eastern Cuba, 1856–57; a Wright specimen without number or locality collected in 1860–64; and a specimen with proliferous spikelets, numbered 887, "Cuba occ. Wr. 1863." This species not infrequently occurs with proliferous spikelets, as in *Palmer & Riley* 130 cited above. The spikelets then consist of many sterile lemmas and the plants appear as if belonging to the tribe Festuceae.

4. Ichnanthus wrightii sp. nov.

Culms slender, prostrate-spreading, more or less rooting at the nodes, glabrous or sparsely villous, 20 to 30 cm. long; sheaths mostly less than half the length of the internodes, striate-nerved, villous on the margins, otherwise glabrous or nearly so; blades ovate-lanceolate, striate-nerved, faintly 3 to 5-ribbed, glabrous, 12 to 30 mm. long, 2 to 8 mm. wide on the sterile shoots, somewhat larger and thicker on the ascending flowering culms, all abruptly or cordately narrowed into a slender stalk 1 to 5 mm. long on the fertile culms, or as much as 15 mm. long on the sterile shoots; panicles 4 to 8 cm. long, consisting of a few spike-like racemes, 0.5 to 2 cm. long; spikelets 3 mm. long, glabrous, the pedicel minutely pubescent; lower glume about half the length of the spikelet, 3-nerved; second glume and sterile lemma equal, acuminate, strongly 5-nerved; fertile lemma scarcely 2 mm. long, the edges meeting and covering the palea, except at the very base, the outer margin of the base of the lemma bearing a scar at each side, but no wings.

Wright's 3880. U. S. National Herbarium no. 559959 of this collection is the type. The specimen in the Sauvalle Herbarium is labeled, "Under overhanging rocks (damp) and around base of palms beside the Rio Seco in Arroyo Honda, Pinar del Rio, Dec." The Grisebach specimen consists of a single spikelet in a packet, labeled "Echinolaena Sp." no. 760. In the Kew Herbarium there are four specimens numbered 2, 23, 244, 760. Nos. 760 and 3880 are also in the Gray Herbarium. This species is allied to *I. mayarensis*.

34. TRICHOLAENA Schrad. in Schult. Mant. 2: 163. 1824.

1. Tricholaena rosea Nees, Cat. Sem. Hort. Vratisl. 1835.
Britton, Britton & Shafer 533.
Sparingly introduced.

35. OPLISMENUS Beauv. Fl. Owar. 2: 14. *t. 58.* 1804.

1. Oplismenus hirtellus (L.) Roem. & Schult. Syst. 2: 481. 1817.
Panicum hirtellum L. Syst. Nat. ed. 10. 2: 870. 1759.
Panicum setarium Lam. Tabl. Encycl. 1: 170. 1791.

Woods, Hanabana, June 1, *Wright* 1543; damp woods, Monte Verde, March, *Wright* 751; Santiago de las Vegas, *Baker* HC 5051, *Hitchcock* in 1906; San Antonio, *Hitchcock* in 1906; Guanajay, *Baker* HC 3461; Habana, *Curtiss* 593, *Leon* 556; Matanzas, *Palmer & Riley* 12; Cienfuegos, *Pringle* 76; *Combs* 667 in Gray Herbarium; El Guama, *Palmer & Riley* 146; Isle of Pines, *Curtiss* 268; Matanzas, *Rugel* 189 in Gray Herbarium. In the herbarium of the New York Botanical Garden are the following: Matanzas, *Britton & Shafer* 221; Santiago de Cuba, *Taylor* 422, 481.

Wright's numbers 751 and 1543 in the Grisebach Herbarium are from eastern Cuba, 1859. The latter is numbered 1593 in Sauvalle's Flora Cubana.

It is quite possible that the specimens here included may be referred to distinct species. The type of *Panicum setarium* Lam. at Paris resembles Wright's 1543. The blades are short and the clusters of spikelets globose and few-flowered. *Wright* 751 and *Curtiss* 268 and 593 have larger and longer blades and spikes, but some of the other specimens are intermediate.

O. setarius Leon 4159

36. CHAETOCHLOA Scribn. U. S. Dept. Agr. Div. Agrost. Bull. **4:** 38. 1897.

Bristles retrorsely barbed; plant annual.....6. *C. verticillata.*
Bristles antrorsely barbed; plants perennial.
Culms pilose.....1. *C. hispida.*
Culms glabrous.
Inflorescence dense and spike-like; involucral bristles 5 or more.
Bristles scarcely exceeding the spikelets; racemes slender.....4. *C. purpurascens.*
Bristles 2 to 4 times as long as spikelets; racemes thick.....2. *C. imberbis.*
Inflorescence comparatively loose; involucral bristles 1 to 3.
First glume 5-nerved, second 9 to 11-nerved.....3. *C. onurus.*
First glume 3-nerved, second 5-nerved.....5. *C. setosa.*

1. **Chaetochloa hispida** Scribn. & Merr. U. S. Dept. Agr. Div. Agrost. Bull. **21:** 25. 1900.

Sandy pine woods, La Grija, Nueva Filipina, January, *Wright* in 1865, in the Gray Herbarium.

2. **Chaetochloa imberbis** (Poir.) Scribn. U. S. Dept. Agr. Div. Agrost. Bull. **4:** 39. 1897.

Panicum imberbe Poir. Encycl. Suppl. **4:** 272. 1817.

Savannas, Chirigote, June 13, *Wright* 3472, 3473; Santiago de las Vegas, *Baker* HC 518, 561, 636, 1358, *Hitchcock* in 1906; Habana, *Curtiss* 749, *Leon* 269, *Tracy* 9112; San Diego de los Baños, *Palmer & Riley* 546; Herradura, *Baker* HC 2965, *Hitchcock* in 1906; Isle of Pines, *Taylor* 45. The following are in the herbarium of the New York Botanical Garden: Matanzas, *Britton & Wilson* 170, *Britton & Shafer* 244; Sagua, *Britton & Wilson* 319; Madruga, *Shafer* 454.

The species of Chaetochloa here considered are accepted as defined by Scribner and Merrill.[a] I have not seen the type of *Panicum imberbe* Poir. nor of *Panicum geniculatum* Lam., which may be an older name for the same.

In the Grisebach Herbarium are the following Wright specimens: 1. "Wet ground around lagunas, Hanabana, May 16," no. 199 of 1865, a prostrate bunch with culms 15 to 20 cm. long. The bristles are only a little longer than the spikelets, the spikes about 1 cm. long, the blades without the scattered long hairs on the upper surface found in most of the specimens. 2. No. 200 of 1865, which Grisebach has labeled *Setaria glauca* α. This also has short bristles. 3. No. 3472, 1860–64, bristles short. 4. No. 3473, 1860–64, bristles about 5 mm. long.

2a. **Chaetochloa imberbis penicillata** (Nees) Scribn. & Merr. U. S. Dept. Agr. Div. Agrost. Bull. **21:** 11. 1900.

Panicum penicillatum Nees, Agrost. Bras. 242. 1829.

Matanzas, July 7, *Wright* 3888; Santiago de las Vegas, *Baker* 522, 1276; Guines, *Leon* 428.

This differs from *C. imberbis* chiefly in having longer bristles.

3. **Chaetochloa onurus** (Willd.) Scribn. & Merr. U. S. Dept. Agr. Div. Agrost. Bull. **21:** 27. 1900.

Panicum onurus Willd.; Nees, Agrost. Bras. 251. 1829, as synonym.

Setaria onurus Griseb. Fl. Brit. W. Ind. 555. 1864.

Wright 3474; *Wright* 182; *Wright* 3887 in National Herbarium (3487 in Sauv. Fl. Cub.); Triscornia, *Tracy* 9090; Cienfuegos, *Combs* 264 in Gray Herbarium. The following are

[a] U. S. Dept. Agr. Div. Agrost. Bull. **21:** 10. 1900.

in the herbarium of the New York Botanical Garden: Santiago de Cuba, *Taylor* 232; Madruga, *Shafer* 453; Matanzas, *Britton & Wilson* 29.

In the Grisebach Herbarium are two Wright specimens of this species, "Savannas of Guanacaro, July 28," no. 287 of 1865, and no. 3474 of 1860 to 1864.

4. **Chaetochloa purpurascens** (H. B. K.) Scribn. & Merr. U. S. Dept. Agr. Div Agrost. Bull. **21**: 13. 1900.

Setaria purpurascens H. B. K. Nov. Gen. & Sp. **1**: 110. 1816.

Batabano, *Shafer* 487; Jaguey, *Eggers* 5320 in Herb. N. Y. Bot. Gard.

5. **Chaetochloa setosa** (Sw.) Scribn. U. S. Dept. Agr. Div. Agrost. Bull. **4**: 39. 1897.

Panicum setosum Sw. Prod. 22. 1788.

Isle of Pines, *Palmer & Riley* 1000 in Herb. N. Y. Bot. Gard.; Santiago de Cuba, *Taylor* 13, 71; Matanzas, *Rugel* 880. Wr. 3879 p.p. in Nat. Hb.

6. **Chaetochloa verticillata** (L.) Scribn. U. S. Dept. Agr. Div. Agrost. Bull. **4**: 39. 1897.

Panicum verticillatum L. Sp. Pl. ed. 2. 82. 1762.

Habana, *Curtiss* 693, *Hitchcock* in 1906, *Baker*, HC 2675, *Leon* 555.

A weed in the Botanical Garden.

37. CENCHRUS L. Sp. Pl. 1049. 1753.

Blades crowded, short, stiff, conspicuously distichous.....2. *C. distichophyllus.*
Blades not crowded, stiff, nor distichous.
  Basal bristles of burs stout.....1. *C. carolinianus.*
  Basal bristles of burs numerous, slender.
    Burs 12 mm. or more wide, lobes erect.....3. *C. echinatus.*
    Burs not over 8 mm. wide, lobes interlocking.....4. *C. viridis.*

1. **Cenchrus carolinianus** Walt. Fl. Car. 79. 1788.

Cenchrus tribuloides L. err. det. Griseb. Fl. Brit. W. Ind. 556. 1864.

Cojimar, *Hitchcock* in 1906; Triscornia, *Hitchcock* in 1906; Guanajay, *Palmer & Riley* 781; Habana, *Palmer & Riley* 1146; *Wright* 3476 in Gray Herbarium.

2. **Cenchrus distichophyllus** Griseb. Cat. Pl. Cub. 234. 1866.

Wright 3475.

The Grisebach specimen, which is the type of this species, is from western Cuba, 1863, numbered "916=3475." Wright's 3475 in the Gray Herbarium is from "Pinales, Guanes, Remates, Dec."

3. **Cenchrus echinatus** L. Sp. Pl. 1050. 1753.

Santiago de las Vegas, *Hitchcock* in 1906; Guanajay, *Palmer & Riley* 679; Isle of Pines, *Taylor* 24; Santiago de Cuba, *Taylor* 24 in Herb. N. Y. Bot. Gard.

4. **Cenchrus viridis** Spreng. Syst. **1**: 301. 1825.

Wright 3889; Guanajay, *Palmer & Riley* 665; Santiago de Cuba, *Millspaugh* 1110, *Pollard, Palmer & Palmer* 284; *Wright* 3476 in Grisebach Herbarium; Cienfuegos, *Combs* 597 in Gray Herbarium. The following are in the herbarium of the New York Botanical Garden: Matanzas, *Britton & Shafer* 127; Santiago de Cuba, *Underwood & Earle* 168. *Wright* 3889 is listed in Sauvalle's Flora Cubana as "Andropogon Sp.?" It would seem that there must be some error in numbering, but this number in the Gray Herbarium is also Cenchrus.

Cenchrus viridis may be distinguished from *C. echinatus* by the smaller burs and more incurved involucre lobes.

C. myosuroides HBK Leon 835

38. PENNISETUM Rich. in Pers. Syn. 1: 72. 1805.[a]

Spike loose; bristles all naked.....1. *P. domingense.*
Spike narrow, dense; some of the bristles plumose.....2. *P. setosum.*

1. **Pennisetum domingense** (Spreng.) Spreng. Syst. **1**: 302. 1825.
Gymnothrix domingensis Spreng.; Schult. Mant. **2**: 284. 1824.
Eastern Cuba, *Wright* 1547 in 1857 in the Grisebach and Gray herbaria.

2. **Pennisetum setosum** (Sw.) Rich. in Pers. Syn. **1**: 72. 1805.
Cenchrus setosus Sw. Prod. 26. 1788.
In thickets skirting pine woods, Pinar del Rio, *Wright* 3471.
The Grisebach specimen is from eastern Cuba, numbered "111=3475." Wright's 3471 in the Gray Herbarium is labeled "Edge of savannas, San Juan de Buenavista, Nov. 24."

39. CHAETIUM Nees, Agrost. Bras. 269. 1829.

1. **Chaetium cubanum** (Wright).
Perotis? cubana Wright, Anal. Acad. Cienc. Habana **8**: 288. 1871; Sauv. Fl. Cub. 202.
Wright 735 in Gray Herbarium.
The locality is not indicated except that the collection was made in eastern Cuba in 1856–57. This is referred by Doell[b] to *Panicum chaetium* Steud. (*Chaetium festucoides* Nees), but it differs in many respects. The blades are short and narrow, mostly involute; the inflorescence is loose, the spikelets few and distant, narrowed to a pedicel 1.5 mm. long, strongly bearded at the base; first glume very narrow, 22 mm. long including awn, 3-nerved at base; second glume 5-nerved, 18 mm. long, including awn; sterile lemma and fertile lemma thin, 3-nerved, awnless, 4.5 mm. long.

40. PARATHERIA Griseb. Cat. Pl. Cub. 236. 1866.[c]

1. **Paratheria prostrata** Griseb. Cat. Pl. Cub. 236. 1866.
Panicum leptochyrium Doell in Mart. Fl. Bras. **2**^{2}: 150. 1877.
Wright 3906; Isle of Pines, *Curtiss* 461.
The Grisebach specimen, which is the type, bears the secondary number 207, and was collected in 1865. This is listed in Sauvalle's Flora Cubana as *Chamaeraphis parvigluma* Munro, a nomen nudum, and the Wright number is misprinted 3909. In the Gray Herbarium is a specimen of this species from Santarem, Pará, collected by Spruce, which agrees with *Curtiss* 461 in being more pubescent than the Wright specimen. This appears to be a duplicate type of *Panicum leptochyrium* Doell, though the specimen is not numbered.

41. STENOTAPHRUM Trin. Fund. Agrost. 175. 1820.

1. **Stenotaphrum secundum** (Walt.) Kuntze, Rev. Gen. Pl. **2**: 794. 1891.
Ischaemum secundum Walt. Fl. Car. 249. 1788.
Wright 3490; Santiago de las Vegas, *Baker* HC 443, 794, 3649; Matanzas, *Britton & Shafer* 140; Guanabacoa, *Baker & Hasselbring* 7200; San Antonio, *Hitchcock* in 1906; Habana, *Palmer & Riley* 822; Cape Corrientes, *Millspaugh* 1459; Cabañas, *Palmer & Riley* 759; Isle of Pines, *Palmer & Riley* 1008, *Rowlee* 49; Cienfuegos, *Combs* 535 in Gray Herbarium. The following are in the herbarium of the New York Botanical Garden: Batabano, *Shafer* 158; Isle of Pines, *Curtiss* in 1904.
The Grisebach specimen was collected in 1860–64.

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[a] In this genus I have followed Leeke, Zeitschr. Naturw. **79**. 1907.

[b] In Mart. Fl. Bras. **2**^{2}: 150. 1877.

[c] This genus is referred to Chamaeraphis R. Br. by Hackel (Engl. & Prantl, Pflanzenfam.) but seems sufficiently distinct.

42. OLYRA L. Syst. Nat. ed. 10. **2:** 1261. 1759.

1. **Olyra latifolia** L. Syst. Nat. ed. 10. **2:** 1261. 1759.

Retiro, February 27, *Wright* 746; Las Acostas, *Baker* HC 5239; Vento, *Baker* HC 584; Lomas de Candelaria, *Baker* HC 1624; Madruga, *Shafer;* Baracoa, *Pollard, Palmer & Palmer* 53; Cienfuegos, *Pringle* 70; El Guama, *Palmer & Riley* 115, 216; Herradura, *Baker* HC 2940, *Hitchcock* in 1906; Isle of Pines, *Palmer & Riley* 1058, 1066, *Curtiss* 293, *Taylor* 26, 27, in Gray Herbarium; Yumury Mountains, *Rugel* 186 in Gray Herbarium; Cienfuegos, *Combs* 210 in Gray Herbarium; Marianao, *Leon* 583. The following are in the herbarium of the New York Botanical Garden: Cedro, *Underwood & Earle* 1538; Yumury Mountains, *Rugel* 873; Santiago de Cuba, *Hamilton* 209; Matanzas, *Britton & Wilson* 457; Madruga, *Britton & Shafer* 315, 736; *Eggers* 4639.

There are two Wright specimens of this in the Grisebach Herbarium, no. 162 of 1865 and no. 746 from eastern Cuba, 1859.

43. LITHACHNE Beauv. Agrost. 135. *t. 24. f. 11.* 1812.

Blades ovate, 1 to 2 cm. wide.....1. *L. pauciflora.*
Blades oblong, less than 5 mm. wide.....2. *L. pineti.*

1. **Lithachne pauciflora** (Sw.) Beauv.; Poir. Dict. Sci. Nat. **27:** 60. 1823.

Olyra pauciflora Sw. Prod. 21. 1788.

Olyra axillaris Lam. Encycl. **4:** 547. 1797.

Lithachne axillaris Beauv. Agrost. 166. *t. 24. f. 11.* 1812.

Wright 732; Santiago de las Vegas, *Baker* HC 4148, 5049, *Hitchcock* in 1906; San Antonio, *Hitchcock* in 1906; Cienfuegos, *Pringle* 54, *Combs* 319 in Gray Herbarium; Madruga, *Curtiss* 661; El Guama, *Palmer & Riley* 105; Herradura, *Baker* HC 2941, *Hitchcock* in 1906; Habana, *Leon* 584. In the herbarium of the New York Botanical Garden: Santiago de Cuba, *Hamilton* 210; *Eggers* 5356.

There are three specimens of this in the Grisebach Herbarium, two from eastern Cuba, 1856–57 and 1859, both numbered 732, and one from western Cuba numbered "1133=732." One sheet of *Wright* 732 in the Gray Herbarium is from "Banks of river, Santa Cruz, San José, Apr. 8."

2. **Lithachne pineti** (Wright) Chase, Proc. Biol. Soc. Wash. **21:** 182. 1908.

Olyra pineti Wright; Griseb. Mem. Amer. Acad. n. ser. **8:** 532. 1862.

Eastern Cuba in 1859, *Wright* 1536 in Grisebach Herbarium. There is a duplicate type in the Gray Herbarium.

44. MNIOCHLOA Chase, Proc. Biol. Soc. Wash. **21:** 185. 1908.

Flowering culms much exceeding sterile ones; fruit glabrous.....1. *M. pulchella.*
Flowering and sterile culms about equal in height; fruit pubescent.2. *M. strephioides.*

1. **Mniochloa pulchella** (Griseb.) Chase, Proc. Biol. Soc. Wash. **21:** 186. 1908.

Digitaria pulchella Griseb. Cat. Pl. Cub. 231. 1866.

Strephium? pulchellum Wright, Anal. Acad. Cienc. Habana **8:** 202. 1871; Sauv. Fl. Cub. 193.

Crece al borde de precipicios en el Yunque de Baracoa *Wright* 3448.

2. **Mniochloa strephioides** (Griseb.) Chase, Proc. Biol. Soc. Wash. **21:** 186. 1908.

Olyra strephioides Griseb. Cat. Pl. Cub. 229. 1866.

Wright 3435; San Diego de los Baños, *Caldwell & Baker* 7011.

The Grisebach specimen, which is the type, is from western Cuba, 1863, numbered "942=3435."

45. PHARUS L. Syst. Nat. ed. 10. 2: 1269. 1759.

Culms creeping at base.....3. *P. parvifolius.*
Culms not creeping at base.
Fruit pubescent only at the tip, slightly exceeding the glume.....2. *P. latifolius.*
Fruit pubescent all over, 2 to 3 times as long as the glume.....1. *P. glaber.*

1. **Pharus glaber** H. B. K. Nov. Gen. & Sp. **1:** 196. 1816.
Dense woods, Valestina, September 27, *Wright* 733; Managuas, *Baker* HC 455; El Guama, *Palmer & Riley* 123, 260; San Antonio, *Hitchcock* in 1906; Yumury Mountains, *Rugel* 871 in Gray Herbarium; Cienfuegos, *Combs* 363 in Gray Herbarium.
The Wright specimens in the Grisebach Herbarium are no. 268 of 1865, no. 733 from eastern Cuba, 1856–57, and no. 733 from eastern Cuba, 1859. The following are in the herbarium of the New York Botanical Garden: Santiago de Cuba, *Taylor* 40, 275, 284, 479; Matanzas, *Britton & Wilson* 66, 227; Madruga, *Britton & Shafer* 789; *Eggers* 4708.

2. **Pharus latifolius** L. Syst. Nat. ed. 10. **2:** 1269. 1759.
Santiago de Cuba, *Taylor* 217, *Hamilton* 211, both in Herb. N. Y. Bot. Gard.

3. **Pharus parvifolius** Nash, Bull. Torr. Club **35:** 301. 1908.
Jaguey, *Eggers* 4939, *Maxon* 4155, in Herb. N. Y. Bot. Gard.
This species, which also occurs in Haiti, differs in having stems with creeping bases.

46. LUZIOLA Gmel. Syst. Nat. 1: 636. 1791.[a]

1. **Luziola bahiensis** (Steud.)
Caryochloa bahiensis Steud. Syn. Pl. Glum. **1:** 5. 1854.
Luziola alabamensis Chapm. Fl. So. U. S. 584. 1860.
Luziola longivalvula Doell in Mart. Fl. Bras. **2**[2]**:** 17. 1871.
In rivulets, the panicles just above the surface of the water, pinales, Pinar del Rio, December, *Wright* 3813.
In the National Herbarium are: Duplicate type of *L. alabamensis* Chapm., collected by J. F. Beaumont, Brooklyn, Alabama, in 1859; duplicate type of *Caryochloa bahiensis* Steud., and also of *Luziola longivalvula* Doell (Bahia, *Salzmann*; Brazil, Prov. Minas Geraes, *Henschen* 1376, cited by Doell).

2 *L. spruceana* Benth.

47. ORYZA L. Sp. Pl. 333. 1753.

1. **Oryza sativa** L. Sp. Pl. 333. 1753.
Wright 3838.
In the National Herbarium is another specimen numbered 191.

48. HOMALOCENCHRUS Mieg. Act. Helvet. Phys.-Math. 4: 307. 1760.

Spikelets 3 mm. long.....1. *H. hexandrus.*
Spikelets 2 mm. long.....2. *H. monandrus.*

1. **Homalocenchrus hexandrus** (Sw.) Kuntze, Rev. Gen. Pl. **2:** 777. 1891.
Leersia hexandra Sw. Prod. 21. 1788.
Wright 3434, 3837; Herradura, *Hitchcock* in 1906.
The Grisebach specimen is from eastern Cuba, 1860, numbered "118=3434." In Sauvalle's Flora Cubana this number is misprinted 3484. Wright's 3434 in the Gray Herbarium is from "San Mateo, in water 3 feet deep."

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[a] Juss. Gen. Pl. 33. 1789, without citation of species.

2. **Homalocenchrus monandrus** (Sw.) Kuntze, Rev. Gen. Pl. **2:** 777. 1891.
Leersia monandra Sw. Prod. 21. 1788.
Wright 731; Yumury Mountains, *Rugel* 200 in Gray Herbarium.

There are two Wright specimens in the Grisebach Herbarium, both numbered 731, one collected in 1856–57, the other in 1859. Wright's 731 in the Gray Herbarium is labeled "In small tufts on precipitous hillsides, Loma de Rangel, July 11."

49. ACHLAENA Griseb. Cat. Pl. Cub. 228. 1866.

1. **Achlaena piptostachya** Griseb. Cat. Pl. Cub. 229. 1866.
Wright 205; Pinar del Rio, *Baker* HC 3747; Isle of Pines, *Curtiss* 236, *Palmer & Riley* 913; *Wright* 3487 in National Herbarium.

The Grisebach specimens are no. 205 of 1865 and no. 3487 of 1860–64 (type).

50. REYNAUDIA Kunth, Rev. Gram. **1:** 195. *pl. 9.* 1829.

1. **Reynaudia filiformis** (Spreng.) Kunth, Rev. Gram. 195. 1829.
Polypogon cubensis Rich. in Sagra, Hist. Cub. **11:** 313. 1850.
Wright 3428; Herradura, *Baker* HC 4825, *Tracy* 9070, *Hitchcock* in 1906; Isle of Pines, *Curtiss* 371; Cienfuegos, *Combs* 579 in Gray Herbarium. The following are in the herbarium of the New York Botanical Garden: Sagua, *Britton & Wilson* 334; Madruga, *Britton & Shafer* 687.

There are two Wright specimens in the Grisebach Herbarium, one from eastern Cuba in 1860, no. "116=3428," and another from western Cuba in 1863, no. "937=3428." Wright's 3428 in the Gray Herbarium is from "Savannas, Chirigote, July 11."

The type of *Polypogon cubensis* is at Paris.

51. ARISTIDA L. Sp. Pl. 82. 1753.

Lateral awns minute or wanting.....5. *A. scabra.*
Lateral awns about as long as central awn.
Awns united into a twisted base about 3 mm. long; blades involute, usually 3 to 5 cm. long.....3. *A. mohrii.*
Awns not united at base.
Central awn 2 to 3 cm. long; blades elongated, 60 to 90 cm. long.....2. *A. erecta.*
Central awn about 1 cm. long; blades short and stiff.
Awns recurved at base at maturity; glumes about 6 mm. long; culm blades scattered.....4. *A. refracta.*
Awns ascending at base; glumes 8 to 9 mm. long; culms rigid and rush-like, the blades often only 1 to 2 cm. long, commonly approximate in pairs.....1. *A. curtifolia.*

1. **Aristida curtifolia** sp. nov.

Culms cespitose, from a perennial base, slender, stiffly erect, somewhat compressed, smooth, 20 to 30 cm. high, the alternate internodes often shortened, thus bringing the leaves together in approximate pairs; sheaths smooth, striate, short, 5 to 10 mm. long, sometimes slightly villous at throat; blades short, thick, stiffly spreading, flat, folded or involute, glabrous, 5 to 20 mm. long and 0.5 to 1 mm. wide, or the upper reduced to mere awns 2 to 3 mm. long; inflorescence a narrow nearly simple panicle, 5 to 10 cm. long, the spikelets subsessile or occasionally terminating short erect branches about 5 mm. long; glumes nearly equal, 8 to 9 mm. long, 1-nerved, smooth, except the scabrous upper part of the keel of the lower glume; lemma 5 to 6 mm. long with a minutely hairy callus 0.5 mm. long, scabrous toward apex; awns about equal, 10 to 12 mm. long, scabrous, spreading but not recurved or twisted at base.

Type, *Wright* 736, 1865, no. 559960 in the U. S. National Herbarium, which also bears the secondary numbers 282 and 286. Other specimens are: *Wright* 736 in eastern

Taylor 44.

Cuba, 1856–57 in Sauvalle Herbarium; Jata Hills at Guanabacoa, *Hitchcock* in 1906; *Baker & Hasselbring* HC 7208, 7211; Madruga, *Britton & Shafer* 658 in Herb. N. Y. Bot. Gard.

There are two Wright specimens of this in the Grisebach Herbarium, "Savannas of Guanacaro, July 28, in small tufts," no. 282 of 1865, and no. 736 from eastern Cuba, 1856–57.

This species is readily recognized by its stiff, rush-like culms and short sharp-pointed blades. On the Jata Hills it occurs on dry, grassy slopes.

2. **Aristida erecta** sp. nov.

Culms erect, rather stout, from a perennial root, about 1.5 meters high, glabrous; sheaths glabrous, longer than the internodes; blades glabrous beneath, scabrous on the nerves above, elongated, convolute, much attenuated at the tip, 3 to 5 mm. wide, as much as 1 meter long; panicles 50 cm. long, the numerous scabrous branches ascending below, spreading above, the lower as much as 20 cm. long, all spikelet-bearing to the base; spikelets crowded, the pedicels erect, stout, 2 to 3 mm. long, glumes glabrous, the first 12 to 15 mm. long, scabrous on the keel, abruptly cuspidate or awn-tipped, 3-nerved, one of the lateral nerves somewhat indistinct, second glume 2 to 3 mm. shorter, acuminate, 1-nerved, smooth on the keel, lemma 12 to 13 mm. long, glabrous, the callus about 1 mm. long, bearded, awns spreading, the central 2 to 3 cm. long, the lateral somewhat shorter.

The type specimen was collected by Wright in Cuba in 1865, no. 41161, in the U. S. National Herbarium. This specimen is numbered in pencil 2432, which is an error for 3432. The corresponding specimen in the Grisebach Herbarium was collected in western Cuba in 1863 and is numbered "928=3432." The only other specimen seen is: Herradura, *Tracy* 9076.

This species resembles *A. palustris* (Chapm.) Vasey, but differs in having taller culms, larger and more spreading panicles, and longer glumes and lemma. In *A. palustris* the panicle is narrow and strict, the glumes are about 10 mm. long and nearly equal, and the lemma is only 7 to 8 mm. long.

3. **Aristida mohrii** Nash, ~~Rep~~ Bull. N. Y. Bot. Gard. **1**: 436. 1900.

In roads Hanabana, January 16, *Wright* 737; *Wright* 3433 in part; *Wright* 742 in National Herbarium; Jata Hills at Guanabacoa, *Hitchcock* in 1906; La Caimanera, *Eggers* 5389.

The Grisebach specimen is from eastern Cuba in 1856–57, no. 737. Another Grisebach specimen, *Wright* "931=3433" from western Cuba, 1863, is doubtfully referred here. It appears to be the same as the fragmentary specimen no. 742, mentioned above.

4. **Aristida refracta** Griseb. Cat. Pl. Cub. 228. 1866.

Aristida gyrans Chapm. Bot. Gaz. **3**: 18. 1878.

Dry savannas, Chirigote, October 26, *Wright* 3431; dry savannas, Chirigote, October 31, *Wright* 3832; in dense bunches along rivulets in sandy soil, Pinar del Rio, October, *Wright* 3834; in small dense tufts, sandy pine woods, Coloma, Pinar del Rio, October, *Wright* 3833; *Wright* 3430, 3831; Jata Hills at Guanabacoa, *Hitchcock* in 1906; Herradura, *Hitchcock* in 1906; Isle of Pines, *Palmer & Riley* 995, *Taylor* 20.

In the Grisebach Herbarium are three Wright specimens of this: Western Cuba, 1863, no. "926=3431;" eastern Cuba, 1860, no. "122=3430;" western Cuba, 1863, no. "908=3430." x = nsp; also Leon 675

5. **Aristida scabra** (H. B. K.) Kunth, Rev. Gram. 62. 1829.

Streptachne scabra H. B. K. Nov. Gen. & Sp. **1**: 124. 1816.

Streptachne cubensis Rich.; Sagra, Hist. Cub. **11**: 311. 1850.

Pebbly pinales in small bunches, Pinar del Rio, October, *Wright* 3835; Puentes Grandes, *Leon* 280; Triscornia, *Hitchcock* in 1906; Cojimar, *Hitchcock* in 1906.

The type of *Streptachne cubensis* is at Paris.

52. MUHLENBERGIA Schreb. Syst. Nat. ed. 13. 2: 87. 171. 1791

1. **Muhlenbergia capillaris** (Lam.) Trin. Gram. Unifl. 191. 1824.
Stipa capillaris Lam. Tabl. Encycl. 1: 158. 1791.
In dense tufts, Guinamar, October, *Wright* 3836. Habana-Leon 2011

53. SPOROBOLUS R. Br. Prod. Fl. Nov. Holl. 169. 1810.

Plants producing long rhizomes; blades conspicuously distichous .5. *S. virginicus.*
Plants cespitose not producing rhizomes; blades not distichous.
Panicle dense and spike-like.....3. *S. indicus.*
Panicle open.
Spikelets about 1.5 mm. long; panicle pyramidal.....1. *S. argutus.*
Spikelets 2.5 to 4 mm. long; panicle elongated-oblong.
Spikelets 2.5 mm. long; basal sheaths not felty.....4. *S. purpurascens.*
Spikelets 3.5 to 4 mm. long; basal sheaths copiously felty-ciliate.....2. *S. cubensis.*

1. **Sporobolus argutus** (Nees) Kunth, Enum. 1: 215. 1833.
Vilfa arguta Nees, Agrost. Bras. 295. 1829.
Wright 3828; Habana, *Baker* HC 1799, *Leon* 285; Batabano, *Shafer* 484, *Hitchcock* in 1906; Triscornia, *Hitchcock* in 1906. The following are in the herbarium of the New York Botanical Garden: Habana, *Baker* 1818; Guantanamo, *Earle* 86.
The type of Nees's species is at Munich. It is not the same as *Vilfa domingensis* Trin., to which it has sometimes been referred. The Grisebach specimen of this, no. 300 of 1865, consists of two plants with two labels, "Saline grounds, in tufts, Matanzas, July 17," and, "Sand banks by the seashore, Palma Sola, Aug. 8."

2. **Sporobolus cubensis** sp. nov. [illegible]
Culms cespitose, glabrous, slender, erect, 40 to 60 cm. high; leaves of innovations numerous, the sheaths copiously felty-ciliate on the margins, with white, yellow, or brown hairs, which extend upward along the margins of the blade for a short distance; basal blades very long and narrow, flat, or involute, nearly as long as the culms, 1 to 2 mm. wide, smooth except for the basal hairs, strongly striate-nerved, the two or three upper blades short, 2 or 3 cm. long; panicle slender-pyramidal, glabrous throughout, 8 to 10 cm. long, branches verticillate, lowermost 5 to 8 in a whorl, slender and stiffly spreading, 1.5 to 3 cm. long; spikelets glabrous, tawny, 3.5 to 4 mm. long, appressed, on pedicels 0.5 to 1 mm. long; lower glumes rather broad, one-third to one-half the length of the spikelet, 1-nerved, the upper glume and lemma about equal, weakly 1-nerved; palea as long as or longer than the lemma; grain oval, flat, 2 mm. long.
Type specimen, Isle of Pines, *Curtiss* 392, U. S. National Herbarium no. 522010. Other specimens are: Herradura, *Hitchcock* in 1906; *Wright* 3427 in Sauvalle Herbarium.
Wright's 3427 in the National Herbarium consists of this species, together with *S. purpurascens*. *S. cubensis* is distinguished from *S. purpurascens* by its larger spikelets, 3.5 mm. long, the elongated blades, and the ferruginous-silky basal sheaths. Heller's 4590 from Porto Rico is *S. cubensis*. In the Grisebach Herbarium are three specimens of this from Wright: No. 3427a of 1860–64; no. "922=3422" from western Cuba, 1863; and no. "945=3422" from western Cuba, 1863. (No. 3422 as published in Grisebach's Catalogue, is *Eragrostis sudans*). It will be noted that nos. 3427 and 3427a are the reverse of what they are in the Sauvalle Herbarium. Wright's 3427 in the Gray Herbarium is from "High pine woods, pinales, Mar. 1;" another sheet of this number is part *S. cubensis* and part *S. purpurascens*.
3. **Sporobolus indicus** (L.) R. Br. Prod. Fl. Nov. Holl. 170. 1810.
Agrostis indica L. Sp. Pl. 63. 1753.
Sporobolus jacquemontii Kunth, Rev. Gram. 2: 427. 1831.

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[a] Gen. Pl. 44. 1789, without citation of species.

Savannas, San Cristobal, August, *Wright* 2829; *Wright* 3426; Cojimar, *Baker* HC 5197, 5334; Santiago de las Vegas, *Baker* HC 537, 5111, *Hitchcock* in 1906; Triscornia, *Tracy* 9081; Guanabacoa, *Leon* 186; Puentes Grandes, *Leon* 275, 282; Habana, *Baker* HC 1279; Madruga, *Shafer* 67; Matanzas, *Britton & Wilson* 473; Batabano, *Shafer* 486; Herradura, *Tracy* 9064, 9066, *Hitchcock* in 1906; Consolacion del Sur, *Palmer & Riley* 473; San Diego de los Baños, *Palmer & Riley* 627; Coloma, *Palmer & Riley* 349; El Guama, *Palmer & Riley* 404; Isle of Pines, *Palmer & Riley* 1121, *Taylor* 48, *Curtiss* 323; Arroyo Apolo, *Leon* 586; Cienfuegos, *Combs* 261 and 263 in Gray Herbarium. The following are in the herbarium of the New York Botanical Garden: Santiago de Cuba, *Taylor* 91; Isle of Pines, *Curtiss* in 1904; Madruga, *Britton & Shafer* 721; *Eggers* 5361.

The three Wright specimens in the Grisebach Herbarium are: Eastern Cuba, 1860, no. "119=3426;" no. 299 of 1865; and eastern Cuba, 1859, no. 1537. In Sauvalle's Flora Cubana the number appears as 3829 instead of 2829. The specimen in the Gray Herbarium is numbered 3829.

4. **Sporobolus purpurascens** (Sw.) Hamilt. Prod. Fl. Ind. Occ. 5. 1825.
Agrostis purpurascens Sw. Prod. 25. 1788.
Vilfa grisebachiana Fourn. Mex. Pl. **2**: 98. 1886.
Sandy pine woods in large tufts, Pinar del Rio, October, *Wright* 3427a.

The two Wright specimens in the Grisebach Herbarium are: no. "907=3427" from western Cuba, 1863, and no. "885=3427", 1863. The type of Swartz's species is at Stockholm; the spikelets are 2.5 mm. long. Fournier noticed the difference between the two species (*S. cubensis* and *S. purpurascens*) distributed by Wright under 3427, but described as new the one already named. *Wright* 3427a in the Gray Herbarium is from "savannas, Chirigote, July 11."

5. **Sporobolus virginicus** (L.) Kunth, Rev. Gram. **1**: 67. 1829.
Agrostis virginica L. Sp. Pl. 63. 1753.
Wright 291; *Wright* 2830 in National Herbarium; Habana, *Baker* HC 1810, *Leon* 284; Mariel, *Palmer & Riley* 736; Isle of Pines, *Palmer & Riley* 955, 1122; Matanzas, *Britton & Wilson* 151 in Herb. N. Y. Bot. Gard.

The Grisebach specimen is no. 291 in 1865, "Seashore, Matanzas, July 8." In Sauvalle's Flora Cubana this is numbered 3830, which is probably correct, as the specimen in the Gray Herbarium is also numbered 3830.

54. CAPRIOLA Adans. Fam. Pl. **2**: 31, 532. 1763.[a]

1. **Capriola dactylon** (L.) Kuntze, Rev. Gen. Pl. **2**: 764. 1871.
Panicum dactylon L. Sp. Pl. 58. 1753.
Cynodon dactylon Pers. Syn. **1**: 85. 1805.
Wright 3814; Santiago de las Vegas, *Baker* HC 386, *Hitchcock* in 1906; Habana, *Leon* 290; Cienfuegos, *Combs* 540 in Gray Herbarium.

55. CHLORIS Sw. Prod. 25. 1788.

Spikelets awnless; spikes dark brown.....6. *C. petraea.*
Spikelets awned; spikes green or yellow.
Spikelets distant, diverging; spikes delicate, scarcely 1-sided.2. *C. cruciata.*
Spikelets contiguous; spikes not delicate, conspicuously 1-sided.

[a] There is some question as to the standing of Capriola as a genus, since it is based upon "Gramen dactylon offic." (Adans. Fam. **2**: 31 and 532. 1763.) But since Linnæus cites under *Panicum dactylon* "Gramen dactylon, radice repente, S. officinarum Scheuch. Gram. 104" we may assume that Adanson wished to base his genus on this species, though he does not quote a definite author.

Upper floret truncate-dilated.
Awns 1 to 2 mm. long; lower lemma long-ciliate on the keel and lateral veins, but not at apex.....1. *C. ciliata.*
Awns, or some of them, 5 mm. long or more; lower lemma ciliate on the upper part of marginal nerves, not on keel.....5. *C. paraguaiensis.*
Upper floret narrowed toward apex.
Lower lemma strongly ciliate at apex with tuft of hairs 2 mm. long.....3. *C. elegans.*
Lower lemma only pubescent at apex.
Lower lemma 3 mm. long; blades short and flat, abruptly rounded at apex.....7. *C. radiata.*
Lower lemma 2 mm. long; blades mostly involute-pointed.....4. *C. eleusinoides.*

1. **Chloris ciliata** Sw. Prod. 25. 1788.

Trinidad, May 17, *Wright* 743; Vento, *Baker* HC 1184, *Curtiss* 600; Guanabacoa, *Leon* 185 in part; Santiago de las Vegas, *Tracy* 9115, *Hitchcock* in 1906; Triscornia 9085; Habana, *Tracy* 9106; Herradura, *Hitchcock* in 1906; Arroyo Apolo. *Leon* 574.

2. **Chloris cruciata** (L.) Sw. Prod. 25. 1788.

Agrostis cruciata L. Syst. Nat. ed. 10. **2:** 873. 1759.

Chloris brevigluma Wright, Anal. Acad. Cienc. Habana **8:** 200. 1871; Sauv. Fl. Cub. 191.

Bushy savannas, Hanabana, May 16, *Wright* 1549; Punta Brava, *Baker* HC 4067; Guanabacoa, *Baker* HC 2927, *Curtiss* 584, *Hitchcock* in 1906; Madruga, *Britton & Shafer* 604 in Herb. N. Y. Bot. Gard.

There are three Wright specimens of this species in the Grisebach Herbarium: Nos. "917=1548" and "932=1548" from western Cuba, 1863, and no. 1549 from eastern Cuba, 1859. The type of *C. brevigluma* is in the Gray Herbarium with printed label for 1860–64, no. 1548. In Sauvalle's Flora Cubana the type is misprinted "1848 p. p." Wright seems to have distinguished his species from *C. eleusinoides* mounted on the same sheet (*Wright* 1549), which he regarded as the true *C. cruciata*. Wright's type matches his no. 1549 in the National Herbarium.

3. **Chloris elegans** H. B. K. Nov. Gen. & Sp. **1:** 166. 1816.

Vento, *Shafer* 483, *Baker* HC 1183; Madruga, *Britton & Shafer* 725; Mazarra, *Baker* HC 4023.

The type of this has not been examined, but the specimens cited above agree well with the plate accompanying the original description.[a]

4. **Chloris eleusinoides** Griseb. Fl. Brit. W. Ind. 539. 1864.

Chloris eleusinoides vestita Greenman in Combs, Trans. Acad. St. Louis **7:** 477. 1897.

Sandy pine woods, La Griza, January, *Wright* 3819; *Wright* 3818; *Wright* 1548; *Baker* HC 4067; La Magdalena, *Baker* Pl. Trop. Am. 4; Havana, *Leon* 287; Herradura, *Hitchcock* in 1906; Cienfuegos, *Combs* 631 in Gray Herbarium.

The Grisebach specimen is from eastern Cuba, 1859, no. 1548. Nos. 1548 and 1549, in the Engelmann Herbarium, both from eastern Cuba, 1860, are *Chloris eleusinoides*. No. 1549 in the Gray Herbarium is also this species (Monte Verde, eastern Cuba in 1859).

Combs's 631, from Cienfuegos, in the Gray Herbarium is the type of *C. eleusinoides* variety *vestita*. It differs from Grisebach's type in being somewhat more pubescent.

[a] Op. cit. *pl. 49.*

5. **Chloris paraguaiensis** Steud. Syn. Pl. Glum. **1**: 204. 1854.
Andropogon barbatum L. Mant. **2**: 302. 1771, not L. 1759.
Chloris barbata Sw. Fl. Ind. Occ. **1**: 200. 1797 (based on *Andropogon barbatum* L. Mant.), not *C. barbata* Nash, Bull. Torr. Club **25**: 443. 1898 (based on *Andropogon barbatum* L. Syst.).
Habana, *Baker* HC 3388, *Tracy* 9113, *Palmer & Riley* 1150; Triscornia, *Tracy* 9084, *Hitchcock* in 1906, *Baker* HC 1864; Matanzas, *Britton* 491; Regla, *Shafer*; Vedado, *Baker* HC 1441; Playa de Cojimar, *Hitchcock* in 1906; Santiago de Cuba, *Millspaugh* 1064; Mariel, *Palmer & Riley* 725; Herradura, *Hitchcock* in 1906. In the herbarium of the New York Botanical Garden: Isle of Pines, *Curtiss* in 1904; Santiago de Cuba, *Underwood & Earle* 101.

6. **Chloris petraea** Sw. Prod. 25. 1788.
Eustachys petraea (Sw.) Desv. Nuov. Bull. Soc. Philom. **2**: 189. 1810.
Wright 293; *Wright* 3817 in National Herbarium; Cojimar, *Baker* HC 2867, *Hitchcock* in 1906; Habana, *Liebmann* 235; Isle of Pines, *Palmer & Riley* 969. In the herbarium of the New York Botanical Garden: Matanzas, *Britton & Shafer* 16; Isle of Pines, *Curtiss* in 1904.
The specimen in the Grisebach Herbarium is numbered 293, 1865. The number 3719, listed in Sauvalle's Flora Cubana under this species, is probably an error. Doell changes the name of *C. petraea* Sw. to *C. swartziana*[a] because of the different *C. petraea* Thunb.[b]

7. **Chloris radiata** (L.) Sw. Prod. 26. 1788.
Agrostis radiata L. Syst. Nat. ed. 10. **2**: 873. 1759.
Eastern Cuba, 1856–57, *Wright* 742; Santiago de las Vegas, *Tracy* 9110, *Hitchcock* in 1906; Playa de Cojimar, *Hitchcock* in 1906; Triscornia, *Hitchcock* in 1906; Habana, *Leon* 558.

56. BOUTELOUA Lag. Var. Cienc. 2^4: 134. 1805.[c]

Primary racemes few, distant on the main axis (5 to 15 mm. apart); blades 1 to 2 mm. wide ..... 1. *B. americana.*
Primary racemes numerous, secund, approximate (1 to 5 mm. apart); blades 3 to 5 mm. wide ..... 2. *B. disticha.*

1. **Bouteloua americana** (L.) Scribn. Proc. Acad. Phila. **1891**: 306. 1891.
Aristida americana L. Syst. Nat. ed. 10. **2**: 879. 1759.
* – *Bouteloua litigiosa* Lag. Gen. & Sp. Nov. 5. 1816.
– *Bouteloua humboldtiana* Griseb. Mem. Amer. Acad. n. ser. **8**: 532. 1862.
Bouteloua porphyrantha Wright, Anal. Acad. Cienc. Habana **8**: 201. 1871; Sauv. Fl. Cub. 192.
Wright 165, 166, 3816; *Wright* 3815 and 734 in Gray Herbarium; Triscornia, *Baker* HC 1873, *Tracy* 9088, *Hitchcock* in 1906; Habana, *Curtiss* 546, *Leon* 293; Colima, *Baker* HC 1978; La Magdaléna, *Baker* HC 3621, Regla, *Shafer* 489; Guanabacoa, *Leon* 38; Marianao, *Leon* 231; Cojimar, *Hitchcock* in 1906.
The Grisebach specimens are *Wright* 161 of 1865, "Bushy savannas, Hanabana, June 1," and 739, from eastern Cuba, 1859. The specimens cited above agree with the Linnæan type, which is not *Aristida dispera* Trin. as stated by Munro.[d]

2. **Bouteloua disticha** (H. B. K.) Benth. Journ. Linn. Soc. **19**: 105. 1882.
Polydon distichus H. B. K. Nov. Gen. & Sp. **1**: 175. 1816.
Madruga, *Curtiss* 537; Habana, *Leon* 299.

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[a] In Mart. Fl. Bras. 2^3: 68. 1878.
[b] Prod. 20. 1794.
[c] Botelua in the original.
[d] Proc. Linn. Soc. Bot. **6**: 49. 1862.

* = B. heterostega (Trin.) Griff
Leon 4147

57. ELEUSINE Gaertn. Fruct. & Sem. **1:** 7. *pl. 1.* 1788.

1. **Eleusine indica** (L.) Gaertn. Fruct. & Sem. **1:** 8. 1788.
Cynosurus indicus L. Sp. Pl. 72. 1753.

Saline flats, Matanzas, July 4, *Wright* 744; Santiago de las Vegas, *Baker* HC 513, 1139, *Hitchcock* in 1906; Puentes Grandes, *Leon* 278; Habana, *Leon* 294; Guanajay, *Palmer & Riley* 817; Santiago de Cuba, *Millspaugh* 1111; Cienfuegos, *Combs* 260 in Gray Herbarium; Isle of Pines, *Curtiss* in 1904 in Herb. N. Y. Bot. Gard.

The Grisebach specimen is no. 277 of 1865. The Sauvalle specimen also bears the secondary number 277.

58. DACTYLOCTENIUM Willd. Enum. 1029. 1809.

1. **Dactyloctenium aegyptium** (L.) Richt. Pl. Eur. **1:** 68. 1870.
Cynosurus aegyptius L. Sp. Pl. 72. 1753.

Pine woods, Nueva Filipina, *Wright* 3821 (misprinted 3831 in Sauvalle's Flora Cubana); Habana, *Leon* 289, 554, *Baker* HC 1795, *Curtiss* 636; Puentes Grandes, *Leon* 273; Triscornia, *Hitchcock* in 1906; Cojimar, *Hitchcock* in 1906; Batabano, *Baker* HC 3919; Cienfuegos, *Combs* 513 in Gray Herbarium.

59. LEPTOCHLOA Beauv. Agrost. 71. *pl. 15. f. 1.* 1812.

Spikelets 2 to 4-flowered, imbricated, on one side of the panicle branches.
  Upper glume as long as lower lemma; sheaths papillose-hispid....2. *L. mucronata.*
  Upper glume shorter than lower lemma; sheaths smooth.....4. *L. virgata.*
Spikelets several-flowered; inflorescence not conspicuously 1-sided.
  Inflorescence a single spike.....3. *L. spicata.*
  Inflorescence of several spike-like racemes.....1. *L. fascicularis.*

1. **Leptochloa fascicularis** (Lam.) Gray, Man. 588. 1848.
Festuca fascicularis Lam. Tabl. Encycl. **1:** 189. 1791.

In tufts, ditches, Matanzas, July 6, *Wright* 303; *Wright* 3822; *Wright* 3812 in National Herbarium; Batabano, *Baker* HC 2762, *Hitchcock* in 1906. In the herbarium of the New York Botanical Garden: Matanzas, *Britton & Wilson* 176; Batabano, *Shafer* 488.

The Grisebach specimen collected in 1865 is numbered 303.

2. **Leptochloa mucronata** (Michx.) Kunth, Rev. Gram. **1:** 91. 1829.
Eleusine mucronata Michx. Fl. Bor. Amer. **1:** 65. 1803.

In fields, Punta de Palma, September, *Wright* 740; Habana, *Britton & Wilson* 509, *Hitchcock* in 1906; Isle of Pines, *Curtiss* 508; Guanabacoa, *Leon* 580.

In the National Herbarium are two Wright specimens of this, numbered 740 and 741. The latter number is probably an error, the label having been interchanged with that of a specimen of *L. fascicularis*. In the Gray Herbarium there are two sheets numbered 741, of which one is *L. filiformis* from "Cultivated ground, Valestina, Nov. 12," 1865, the other *L. virgata.*

The type of *Festuca filiformis* Lam.[a] "ex Amer. merid. Comm. D. Richard" upon which *Leptochloa filiformis* Beauv. is presumably based, has not been examined, and the description is insufficient for identification. This name may be found to apply to this species.

3. **Leptochloa spicata** (Nees) Scribn. Proc. Acad. Phila. **1891:** 304. 1891.
Bromus spicatus Nees, Agrost. Bras. 471. 1829.
Triscuspis simplex Griseb. Mem. Amer. Acad. n. ser. **8:** 532. 1862.
Wright 1551.

There are two Wright specimens in the Grisebach Herbarium, both from eastern Cuba, no. 114 of 1860 and no. 1551 of 1859. Wright's 1551 is represented in the Gray

[a] Tabl. Encycl. **1:** 191. 1791.

Herbarium by two specimens, one of 1860–64, labeled "Savannas, Hoto del Medio, Aug. 25," the other, Monte Verde, 1859, labeled "On rocks exposed to the sun, covered with a thin stratum of earth, on the brink of the Farallones, Oct. 11."

4. **Leptochloa virgata** (L.) Beauv. Agrost. 166. 1812.

Cynosurus virgatus L. Syst. Nat. ed. 10. **2:** 876. 1759.

Leptochloa perennis Hack. Inf. Anal. Est. Agr. Cuba **1:** 411. 1906.

Wright 283, 741, 3436; Habana, *Tracy* 9108, *Curtiss* 607; La Magdalena, *Baker* HC 3635; Matanzas, *Britton* 543; Santiago de las Vegas, *Hitchcock* in 1906; Herradura, *Baker* HC 765, 2786, *Tracy* 9061, *Hitchcock* in 1906; Cayamas, *Baker* HC 4617; Cienfuegos, *Pringle* 62, *Combs* 256 in Gray Herbarium; San Diego de los Baños, *Palmer & Riley* 543; Santiago de Cuba, *Pollard, Palmer & Palmer* 273; Marianao, *Leon* 560; Yumury Mountains, *Rugel* 193 in Gray Herbarium. In the herbarium of the New York Botanical Garden are: Santiago de Cuba, *Palmer* 273; Baracoa, *Underwood & Earle* 1397; Madruga, *Britton & Shafer* 746.

Wright's 741 in the Sauvalle Herbarium has also the secondary number 278. In the Grisebach Herbarium are three specimens of this: "In roads, probably introduced, La Ferruina, June 24," no. 278 of 1865; no. 3436 of 1860–64; no. "117=740" from eastern Cuba, 1860. One of the Wright specimens bearing the number 741 in the Gray Herbarium (eastern Cuba, 1856–57) is *L. virgata;* the other is *L. mucronata.* Wright's 3436 in the Gray Herbarium is from Mayarí Abajo, Aug. 2. Another specimen in the Gray Herbarium without number is from "Savannas, Retiro, Oct. 11."

60. OPIZIA Presl, Rel. Haenk. 1: 293. *t. 41. f. 1.* 1830.

1. **Opizia stolonifera** Presl, Rel. Haenk. **1:** 293. 1830.

Cojimar, *Baker* HC 2898, 5076, *Hitchcock* in 1906; Pinar del Rio, *Shafer* 482; Habana, *Curtiss* 571, *Leon* 274, 288.

61. PAPPOPHORUM Schreb.; Vahl, Symb. Bot. **3:** 10. 1794.[a]

1. **Pappophorum laguroides** Schrad. in Schult. Mant. **2:** 342. 1824.

Triscornia, *Hitchcock* in 1906.

62. GYNERIUM ~~H. B. K.~~ Pl. Aequin. **2:** 112. *t. 115.* 1809.

1. **Gynerium sagittatum** (Aubl.) Beauv. Agrost. 138. 1812.

Saccharum sagittatum Aubl. Pl. Guian. **1:** 50. 1775.

Gynerium saccharoides ~~H. B. K.~~ Pl. Aequin. **2:** 112. 1809.

Retiro, *Wright* 224; *Wright* 3477; Santiago de las Vegas, *Baker* HC 1297, 5017, *Wilson* 237; San Diego de los Baños, *Palmer & Riley* 616. In the herbarium of the New York Botanical Garden are the following: Matanzas, *Britton & Shafer* 265, *Britton & Wilson* 205; Santiago de Cuba, *Taylor* 145; Calvario, *Leon* 569.

In the Grisebach Herbarium are *Wright* 3477, 1860–64, and 1560 of 1859. Wright's 1560 in the Gray Herbarium is from Monte Verde; no. 3477 is labeled "10–15 ft. panicle 4–6 ft. On stony ledges in the river Tacotaco, Sept. 13."

63. ERAGROSTIS Host, Icon. Gram. Austr. **4:** 14. *pl. 14. f. 11.* 1809.[b]

Flowers dicœcious; creeping annuals ..... 7. *E. hypnoides.*
Flowers perfect, stems not creeping.
  Palea prominently ciliate; annuals.
    Panicle contracted, spike-like ..... 2. *E. ciliaris.*
    Panicle open ..... 8. *E. plumosa.*

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[a] Schreb. Gen. **2:** 787. 1791, without citation of species.

[b] Until the genus Eragrostis is monographed the Cuban species must remain somewhat uncertain.

Palea not prominently ciliate.
Annual; blades flat; panicle open but not very diffuse ..9. *E. tephrosanthes.*
Perennial.
Plants low, 10 to 20 cm. high; blades involute, panicle not diffuse.
Spikelets 3 to 5-flowered; pedicels glutinous; palea somewhat ciliate .....6. *E. glutinosa.*
Spikelets many-flowered; pedicels not glutinous; palea only minutely ciliate.....3. *E. cubensis.*
Plants tall; blades flat; panicles very diffuse.
Spikelets less than 2 mm. long, 1 or 2-flowered..1. *E. airoides.*
Spikelets 5 to 10 mm. long, several-flowered.
Spikelets lanceolate; pedicels shorter than spikelets; panicle branches lax; culms 1 meter or more tall.....5. *E. excelsa.*
Spikelets linear; pedicels mostly longer than spikelets; panicle branches stiffly spreading; culms rarely over 60 cm. tall.....4. *E. elliottii.*

1. **Eragrostis airoides** Nees, Agrost. Bras. 509. 1829.
In savannas, Chirigote, November 2, *Wright* 3827.

2. **Eragrostis ciliaris** (L.) Link, Hort. Berol. **1**: 192. 1827.
Poa ciliaris L. Syst. Nat. ed. 10. **2**: 875. 1759.
Wright 155; *Wright* 1550; Cojimar, *Hitchcock* in 1906; Batabano, *Baker* HC 3912; Guines, *Baker* HC 3561; Robles, *Shafer* 40; Guanabacoa, *Leon* 196; Puentes Grandes, *Leon* 281; Herradura, *Baker* HC 2778; Matanzas, *Palmer & Riley* 13; El Guama, *Palmer & Riley* 185; Santiago de Cuba, *Millspaugh* 1062; Cienfuegos, *Combs* 480 in Gray Herbarium. In the herbarium of the New York Botanical Garden are the following: Isle of Pines, *Curtiss* in 1904; Matanzas, *Britton & Shafer* 555; Santiago de Cuba, *Underwood & Earle* 172.
The Wright specimen in the National Herbarium bears the secondary number 305. In the Grisebach Herbarium are two Wright specimens of this, no. 305 of 1865 and no. 1550 from eastern Cuba, 1859. In the Gray Herbarium are two specimens of *Wright* 1550, one of 1860–64, the other from Josephina, near Monte Verde, 1859.

3. **Eragrostis cubensis** sp. nov.
Culms cespitose from a perennial base, numerous, slender and wiry, smooth, erect or spreading, 10 to 20 cm. long, or occasionally decumbent and as much as 30 cm. long; sheaths smooth, striate; blades filiform-convolute, glabrous, or very sparsely pilose, the base and mouth of sheath pilose, 2 to 3 cm. long, or those on the innovations as much as 10 cm. long; panicles nearly simple, 2 to 4 cm. long, the branches 1 to 2 mm. long, bearing a single spikelet, or the lowermost as much as 1 cm. long, bearing 2 to 4 spikelets; spikelets linear, 5 to 15 mm. long, 1 mm. wide, as much as 40-flowered; glumes smooth, nearly equal, about 1 mm. long; lemma acute, 3-nerved, glabrous, keel smooth; palea minutely ciliate.
Isle of Pines, *Curtiss* 420 (type U. S. National Herbarium no. 522037); *Wright* 3424, 3825; Vedado, *Baker* HC 3456; Madruga, *Shafer* 68; La Magdalena, *Baker* Pl. Trop. Amer. 3; Herradura, *Tracy* 9097, *Baker* HC 2938, 4876, 4877, *Hitchcock* in 1906; Sagua, *Britton & Wilson* 382 in Herb. N. Y. Bot. Gard.
This has been confused with *E. bahiensis* Steud., which is a larger plant, 60 cm. or more tall. *E. berteroiana* (Schult.) Kunth, of Santo Domingo, has smaller spikelets with lemmas scabrous on the keel, as shown by a specimen from Kunth in Trinius's herbarium. The Grisebach specimen from Wright is numbered "938=3424," and is from western Cuba, 1863, "bushy swamps, Hanabana, May 16." Another

is from western Cuba, 1863, and is numbered 903. Wright's 3424 in the Gray Herbarium is from "savannas, Chirigote, July 13."

This is described and figured by Sloane,[a] and is cited as a synonym by Swartz under *Poa glutinosa* [b] and by Grisebach;[c] but *Poa glutinosa* Sw. is *Eragrostis sudans* Griseb., while Wullschlaegel's specimen from Jamaica, cited by Grisebach under *Eragrostis glutinosa*, is *E. elliottii* S. Wats.

4. **Eragrostis elliottii** S. Wats. Proc. Amer. Acad. **25:** 140. 1890.

Poa nitida Ell. Bot. S. C. & Ga. **1:** 162. 1816, not *Poa nitida* Lam. 1791, nor *Eragrostis nitida* Link, 1827.

Eragrostis macropoda Pilger in Urban, Symb. Antill. **4:** 106. 1903.

Savannas, Retiro, June, *Wright* 3423; without data, *Wright;* Cojimar, *Baker* HC 5332; Pinar del Rio, *Baker & Abarca* HC 3735, *Palmer & Riley* 441; Herradura, *Tracy* 9096, *Hitchcock* in 1906; Isle of Pines, *Taylor* 25. In the herbarium of the New York Botanical Garden are: Sagua, *Britton & Wilson* 320; Isle of Pinés, *Curtiss* in 1904.

The Grisebach specimens are nos. 155, 155a, 155b, all of 1865. Wright's 3423 in the Gray Herbarium is from "lagunas, Vueltabajo, July 24."

Pilger [d] states that *E. macropoda* differs from *E. nitida* (Ell.) Chapm. in having long-peduncled spikelets. However, the type of *Poa nitida* Ell. has long-peduncled spikelets and is well matched by *Wright* 3423.

5. **Eragrostis excelsa** Griseb. Cat. Pl. Cub. 227. 1866.

Wright 3425.

The Grisebach specimen is no. 3425, 1860–64. Wright's 3425 in the Gray Herbarium is from "sand beaches by the seaside, Toscano, Oct. 30."

6. **Eragrostis glutinosa** (Sw.) Trin. Mem. Acad. Petersb. VI. **1:** 397. 1831.

Poa glutinosa Sw. Prod. 26. 1788.

Eragrostis sudans Griseb. Cat. Pl. Cub. 227. 1866.

Wright 3422.

The Grisebach specimen is from eastern Cuba, 1860, numbered "112=3422." The Sloane [e] figure cited by Swartz is *Eragrostis cubensis* Hitchc.

The type of Swartz's species in the Stockholm Herbarium is from Jamaica. In the Trinius Herbarium is a duplicate from Swartz, which is the basis of *Eragrostis glutinosa* Trin.

7. **Eragrostis hypnoides** (Lam.) B. S. P. Prel. Cat. N. Y. 69. 1888.

Poa hypnoides Lam. Tabl. Encycl. **1:** 185. 1791.

Poa reptans Michx. Fl. Bor. Amer. **1:** 69. 1803.

Eragrostis reptans Nees, Agrost. Bras. 514. 1829.

Around lagunas, Hanabana, May 20, *Wright* 156; *Wright* 3826; Laguna de Castellano, *Baker* HC 1356; Isle of Pines, *Curtiss* 391. The following are in the herbarium of the New York Botanical Garden: Habana, *Baker* 4328; Santiago de Cuba, *Hamilton* 214; Baracoa, *Underwood & Earle* 1387.

The Grisebach specimen from Wright is no. 156 of 1865.

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[a] Hist. Jam. **1:** *pl. 71. f. 2.* 1707.
[b] Sw. Prod. 26. 1788.
[c] Fl. Brit. W. Ind. 532. 1864.
[d] Loc. cit.
[e] Hist. Jam. **1:** *pl. 71. f. 2.* 1707.

8. **Eragrostis plumosa** (Retz.) Link, Hort. Berol. **1**: 192. 1827.[a]
Poa plumosa Retz. Obs. **4**: 20. 1786.
Santiago de las Vegas, *Baker* HC 1030; Habana, *Hitchcock* in 1906; Puentes Grandes, *Leon* 277; Santiago de Cuba, *Palmer* 374, *Underwood & Earle* 173 in Herb. N. Y. Bot. Gard.

9. **Eragrostis tephrosanthes** Schult. Mant. **2**: 316. 1824.
Wright 745; Santiago de las Vegas, *Baker* HC 3666; Vento, *Wilson* 1182; Carduas, *Britton & Wilson* 156a; Guanabacoa, *Leon* 205; Puentes Grandes, *Leon* 276; Habana, *Leon* 295, *Hitchcock* in 1906; Cojimar, *Hitchcock* in 1906; Herradura; *Tracy* 9057, *Hitchcock* in 1906; Cienfuegos, *Combs* 266 in Gray Herbarium; Matanzas, *Britton & Shafer* 557 in Herb. N. Y. Bot. Gard.
The Grisebach specimen is from Wright, 1860–64, without number. In the Gray Herbarium is a Wright specimen without number, with an 1860–64 label, and two specimens numbered 745 from eastern Cuba, one collected in 1856–57, the other in 1859.
This species is similar to *E. pilosa* (L.) Beauv., but the spikelets are larger and broader.

64. UNIOLA L. Sp. Pl. 71. 1753.

Spikelets 15 mm. or more long, 7 to 10 mm. wide .....1. *U. paniculata.*
Spikelets 2 to 3 mm. long, 1 to 2 mm. wide .....2. *U. virgata.*

1. **Uniola paniculata** L. Sp. Pl. 71. 1753.
Wright 2823 [error for 3823].
The Grisebach specimen is labeled "Sandy sea-beach, Cananova, July 15," no. 280, 1865. In Sauvalle's Flora Cubana this is numbered 3823, which is apparently correct. The specimen in the Gray Herbarium is numbered 3823.

2. **Uniola virgata** (Poir.) Griseb. Fl. Brit. W. Ind. 531. 1864.
Poa virgata Poir. in Lam. Encycl. **5**: 78. 1804.
Punta Brava, *Rugel* 870 in Grisebach Herbarium; also in the Gray Herbarium and that of the New York Botanical Garden.

65. DISTICHLIS Raf. Journ. Phys. **89**: 104. 1819.

1. **Distichlis spicata** (L.) Greene, Bull. Calif. Acad. Sci. **2**: 415. 1887.
Uniola spicata L. Sp. Pl. 71. 1753.
Vedado, *Baker* HC 3455; Batabano, *Shafer* 117, *Hitchcock* in 1906.

66. ARTHROSTYLIDIUM Rupr. Mem. Acad. Petersb. VI. **5**: 117. 1839.

Blades capillary.....2. *A. capillifolium.*
Blades flat.
Blades less than 5 cm. long.
Sheaths puberulent, bristles at summit inconspicuous...6. *A. sarmentosum.*
Sheaths glabrous, bristles at summit elongated.
Blades about 5 mm. wide; spikelets reflexed.....4. *A. distichum.*
Blades about 2 mm. wide; spikelets appressed.....5. *A. fimbriatum.*
Blades 10 cm. or more long.
Blades puberulent beneath, often reflexed.....7. *A. urbanii.*
Blades glabrous beneath, erect.
Blades 5 to 10 mm. wide.....3. *A. cubense.*
Blades about 2 mm. wide, elongated.....1. *A. angustifolium.*

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[a] Trimen (Fl. Ceylon **5**: 291. 1900) considers this different from *E. tenella* (L.) Roem. & Schult. (*Poa tenella* L., *Poa amabilis* L.) and includes it as *E. tenella plumosa* (Retz.) Stapf; Fl. Brit. Ind. **7**: 315. 1896.

A. multispicatum Lour 4026

1. **Arthrostylidium angustifolium** Nash, Torreya **3:** 172. 1903.
Baracoa, *Underwood & Earle* 941 in Herb. N. Y. Bot. Gard.

2. **Arthrostylidium capillifolium** Griseb. Mem. Amer. Acad. n. ser. **8:** 531. 1862.
Without data, *Wright;* Madruga, *Shafer* 11; Santiago de Cuba, *Taylor* 218, *Hamilton* 212, both in Herb N. Y. Bot. Gard.

The Wright specimen in the Grisebach Herbarium is no. 738 from eastern Cuba in 1856–57. Since the above specimen is the only Arthrostylidium in the Sauvalle Herbarium without number, it is probably the one listed under no. 2744 in Sauvalle's Flora Cubana, "Arthrostylidium sp.? (sine numero)."

In the Gray Herbarium are two specimens of *Wright* 738, both from eastern Cuba, one with flowers, collected in 1856–57, the other sterile, "In dense woods, ascending on trees and bushes, 10–20 ft., Monte Verde, Aug. 22, 1859."

3. **Arthrostylidium cubense** Rupr. Mem. Acad. Petersb. VI. **5:** 118. 1839.
"Pendant on cliffs, pinales, Nov.," "Banks of river San Sebastian, Pinar del Rio, Dec.," *Wright* 3811; without locality, *Wright* 3809.

The two Grisebach specimens are labeled "Subscandent, 10 ft., savannas of Guanacaro, near rivulets, Aug. 3," no. 307, 1865, and "Savannas of Guanacaro, July 31," no. 288. The Wright specimens agree with the type in the Trinius Herbarium.

4. **Arthrostylidium distichum** Pilger in Urban, Symb. Antill. **2:** 342. 1901.
"In dense woods, Oct. 19," "Damp woods, Rangel, Nov. 14," *Wright* 3808.

5. **Arthrostylidium fimbriatum** Griseb. Mem. Amer. Acad. n. ser. **8:** 531. 1862.
Eastern Cuba in 1859, *Wright* 1554 in Grisebach Herbarium. This number in the Gray Herbarium is labeled, "In dense woods, 1–3 ft. high, Dec. 23," from Monte Verde, 1859. A sterile specimen in the herbarium of the New York Botanical Garden from Santiago de Cuba, *Taylor* 415, appears to be this species.

6. **Arthrostylidium sarmentosum** Pilger in Urban, Symb. Antill. **4:** 108. 1903.
Santiago de Cuba, *Hamilton* 213 in Herb. N. Y. Bot. Gard.

7. **Arthrostylidium urbanii** Pilger in Urban, Symb. Antill. **2:** 339. 1901.
Wright 3810.

In the Gray Herbarium there are two sterile specimens of what appear to be this species, numbered 41 and 288.

Gramen sp., *Wright* 3894. This number is represented by an unidentifiable fragmentary specimen from which the spikelets have fallen. It is listed in Sauvalle's Flora Cubana as "*Muhlenbergia spicata* Munn." = Sauvalle NY

GRASSES OF GRISEBACH'S CATALOGUE.[a]

1. Arthrostylidium fimbriatum Gr. Wr. 1554. See p. 246.
2. Arthrostylidium cubense Rupr. Wr. a. 1865 (307).[b] See p. 246.
3. Arthrostylidium capillifolium Gr. Wr. 738. See p. 246.
4. Arundo saccharoides Gr. Wr. 1560, 3477. See Gynerium sagittatum, p. 242.
5. Uniola virgata Gr. Rug. 870. See p. 245.
6. Uniola paniculata L. Wr. a. 1865 (280). See p. 245.
7. Eragrostis excelsa Gr. Wr. 3425. See p. 244.
8. Eragrostis prolifera Steud. Wr. a. 1865 (155a). See E. elliottii, p. 244.
9. Eragrostis pilifera Benth. Wr. a. 1865 (156b). See E. elliottii, p. 244.

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[a] Catalogus Plantarum Cubensium, 1866.

[b] The numbers in parentheses refer to the secondary numbers on the labels in Grisebach's herbarium. The other numbers and the names are as given by Grisebach. The "a" stands for anno.

10. Eragrostis glutinosa Tr. Wr. 3423. See E. elliottii, p. 244.
11. Eragrostis pilosa P. B. Wr. 745. See E. tephrosanthes, p. 245.
12. Eragrostis bahiensis Schrad. Wr. 3424. See E. cubensis, p. 243.
13. Eragrostis reptans Ns. Wr. a. 1865 (156). See E. hypnoides, p. 244.
14. Eragrostis sudans Gr. Wr. 3422. See E. glutinosa, p. 244.
15. Eragrostis ciliaris Lk. Wr. 1550. See p. 243.
16. "Festuca laxiflora Rich." (Rich.) E. [No specimen found.]
17. Sporobolus virginicus Kth. Wr. a. 1865 (291). See p. 238.
18. Sporobolus domingensis Kth. Wr. a. 1865 (300). See Sporobolus argutus, p. 237.
19. Sporobolus purpurascens Ham. Wr. 3427. See p. 238, and S. cubensis, p. 237.
20. Sporobolus indicus R. Br. Wr. 1537. See p. 237.
21. Sporobolus jacquemontii Kth. Wr. 3426. See Sporobolus indicus, p. 237.
22. Reynaudia filiformis Kth. Wr. 3428. See p. 235.
23. Aristida stricta Mich. Wr. 736. See Aristida curtifolia, p. 235. Wr. 737. See A. mohrii, p. 236. Wr. 3430. See A. refracta, p. 236.
24. Aristida refracta Gr. Wr. 3431. See p. 236.
25. Aristida purpurascens Poir. Wr. 3432. See Aristida erecta, p. 236.
26. Aristida interrupta Cav. Wr. 3433. See Aristida mohrii, p. 236.
27. "Streptachne cubensis Rich." See Aristida scabra, p. 236.
28. Milium lanatum R. S. Wr. 3429. See Leptocoryphium lanatum, p. 207.
29. Leersia hexandra Sw. Wr. 3434. See Homalocenchrus hexandrus, p. 234.
30. Leersia monandra Sw. Wr. 731. See Homalocenchrus hexandrus, p. 234.
31. Achlaena piptostachya Gr. Wr. 3487. See p. 235.
32. Olyra latifolia L. Rug. 873; Wr. a. 1865 (162). See p. 233. Variety arundinacea Tr. Wr. 746. See Olyra latifolia, p. 233.
33. Olyra pauciflora Sw. Wr. 732. See Lithachne pauciflora, p. 233.
34. Olyra pineti Wr. Wr. 1536. See Lithachne pineti, p. 233.
35. Olyra strephioides Gr. Wr. 3435. See Mniochloa strephioides, p. 233.
36. Pharus latifolius L. Wr. 733. See Pharus glaber, p. 234.
37. Pharus glaber Kth. Wr. 733b. See p. 234.
38. Bouteloua humboldtiana Gr. Wr. 734, 739. See Bouteloua americana, p. 240.
39. Leptochloa mucronata Kth. Wr. 740. See p. 241. Wr. 3436. See L. virgata, p. 242.
40. Leptochloa virgata P. B. Wr. 741. See p. 242.
41. Leptochloa fascicularis As. Gr. Wr. a. 1865 (303). See p. 241.
42. Tricuspis simplex Gr. Wr. 1551. See Leptochloa spicata, p. 241.
43. Chloris cruciata Sw. Wr. 1548, 1549. See p. 239.
44. Chloris eleusinoides Gr. See p. 239.
45. Chloris radiata Sw. See p. 240.
46. Chloris ciliata Sw. Wr. 743. See p. 239.
47. Chloris petraea Thunb. Wr. a. 1865 (293). See p. 240.
48. Dactyloctenium "aegyptiacum W." See D. aegyptium, p. 241.
49. Eleusine indica G. Wr. 744. See p. 241.
50. Cynodon dactylon Pers. See Capriola dactylon, p. 238.
51. Reimaria acuta Fl. Wr. 3437. See Reimarochloa brasiliensis, p. 198.
52. Paspalum compressum Ns. Wr. a. 1865 (168). See Axonopus compressus, p. 207.
53. Paspalum platyphyllum Gr. Wr. 3441, Wr. a. 1865 (174). See Brachiaria plantaginea, p. 212.
54. Paspalum conjugatum Berg. Wr. 767. See p. 201.
55. Paspalum lindenianum Rich. Wr. 3445. See P. rupestre, p. 206.
56. Paspalum nanum Wr. Wr. a. 1865 (176). See p. 204.
57. Paspalum distichum L. variety vaginatum Sw. Wr. 1546. See P. distichum, p. 202, and P. vaginatum, p. 206.
58. Paspalum notatum Fl. Wr. 3438. See P. minus, p. 203.
59. Paspalum filiforme Sw. Wr. 769. See p. 202.

60. Paspalum alterniflorum Rich. Rug. 894, Wr. a. 1865 (167). See p. 200.
61. Paspalum pulchellum Kth. Wr. 3439. See p. 205.
62. Paspalum dissectum L. Wr. 3440. See p. 202.
63. Paspalum setaceum Mich. Wr. 3442. See P. rigidifolium, p. 205.
64. Paspalum caespitosum Fl. Wr. 3443. See p. 201, and P. arenarium, p. 201. Wr. 3444. See p. 201, P. clavuliferum, p. 201, and P. rupestre, p. 206.
65. Paspalum glabrum Poir. Wr. a. 1865 (298). See p. 202.
66. Paspalum plicatulum Mich. Wr. 768. See p. 205.
67. Paspalum virgatum L. Wr. 3446. See p. 206.
    Variety stramineum Gr. Wr. a. 1865 (302). See P. virgatum, p. 206.
68. Paspalum paniculatum L. Wr. 766. See p. 204.
69. Paspalum densum Poir. Wr. 3447. See p. 202.
70. Digitaria filiformis Muhlenb. Wr. 1544. See Syntherisma filiformis, p. 209, and S. leucocoma, p. 209.
71. Digitaria pulchella Gr. Wr. 3448. See Mniochloa pulchella, p. 233.
72. Digitaria marginata Lk. Wr. 765. See Axonopus compressus, p. 207.
    Variety eriogona Lk. Wr. a. 1865 (178, 294). See Syntherisma sanguinalis, p. 209.
73. Digitaria setigera Rth. Wr. 764. See Syntherisma digitata, p. 209.
74. Eriochloa punctata Ham. Wr. 1542. See p. 208.
75. Stenotaphrum americanum Schrk. Wr. 3490. See Stenotaphrum secundum, p. 232.
76. Orthopogon "hirtellus R. Br." See Oplismenus hirtellus, p. 229.
77. Orthopogon loliaceus Spreng. Wr. 751. See Oplismenus hirtellus, p. 229.
78. Orthopogon setarius Spreng. Wr. 1543. See Oplismenus hirtellus, p. 229.
79. Panicum lolium Ns. Wr. 3449. See Mesosetum rottboellioides, p. 211.
80. Panicum paspaloides Pers. Wr. 761. See Panicum geminatum, p. 222.
81. Panicum colonum L. Wr. 752. See Echinochloa colona, p. 213.
82. Panicum crusgalli L. Rug. 889. See Echinochloa crusgalli, p. 213.
83. Panicum prostratum Lam. Rug. 195; Wr. 762. See P. reptans, p. 225.
84. Panicum grossarium L. Wr. a. 1865 (304). See P. adspersum, p. 217.
85. Panicum distantiflorum Rich. Wr. 3452. See p. 220.
86. Panicum fuscum Sw. Wr. 754. See P. fasciculatum, p. 221.
87. Panicum molle Sw. Wr. 1545. See P. numidianum, p. 224.
88. Panicum oryzoides Sw. Wr. 3466. See P. zizanioides, p. 228.
89. Panicum stenodes Gr. Wr. a. 1865 (192). See p. 227.
90. Panicum neuranthum Gr. Wr. 3453. See p. 224. Wr. a. 1865. See P. chrysopsidifolium, p. 218, and P. fusiforme, p. 222. β ramosum. Wr. 3454. See P. chrysopsidifolium, p. 218, and P. fusiforme, p. 222.
91. Panicum proliferum Lam. variety pilosum. Wr. a. 1865 (186). See P. chloroticum, p. 218. Variety strictum. Wr. 3456. See P. chloroticum, p. 218.
92. Panicum diffusum Sw. Wr. 1540. See p. 220.
93. Panicum durum Gr. Wr. 1539. See Alloteropsis dura, p. 211.
94. Panicum laxum Sw. Wr. 759. See p. 223.
    Variety variegatum Gr. Wr. 3450. See P. exiguiflorum, p. 221.
95. Panicum distichum Lam. variety pilosum Sw. Wr. 3451. See P. pilosum, p. 225.
96. Panicum maximum Jacq. See p. 224.
97. Panicum virgatum L. variety cubense. Wr. a. 1865. (183). See p. 227.
98. Panicum rudgei R. S. Wr. a. 1865 (281). See P. hirtivaginum, p. 223.
99. Panicum hirsutum Sw. Wr. a. 1865 (297). See p. 222.
100. Panicum lindenii Gr. See P. glutinosum, p. 222.
101. Panicum pallens Sw. Wr. 750. See Ichnanthus pallens, p. 228. 3468. See Ichnanthus mayarensis, p. 228. 750 posterius (887). See Ichnanthus pallens, p. 228.

102. Panicum divaricatum L. Wr. 747. See p. 220.
Variety puberulum Gr. Wr. 748. See P. divaricatum, p. 220.
103. Panicum rugelii Gr. Rug. 188; Wr. 3465. See p. 226.
104. Panicum sloanei Gr. Rug. 872; Wr. a. 1865 (269). See p. 226.
105. Panicum martinicense Gr. Wr. 3457. See P. grisebachii, p. 222.
106. Panicum glutinosum Sw. Wr. 757. See p. 222.
107. Panicum rugulosum Trin. variety hirtiglume Gr. Wr. 3455. See P. sellovii, p. 226.
108. Panicum cayennense Lam. Wr. (891). See p. 218.
109. Panicum brevifolium L. Wr. 1538. See P. trichoides, p. 227.
110. Panicum cyanescens Ns. Wr. 3458. See P. parvifolium, p. 225. Wr. 3459. See P. nitidum, p. 224.
111. Panicum tricanthum Ns. Wr. 753. See p. 227.
112. Panicum dichotomum L. variety glabrescens Gr. Wr. 3462. See P. erectifolium, p. 221. Wr. 3463. See P. caerulescens, p. 219; P. leucothrix, p. 224; P. tenue, p. 227; P. wrightianum, p. 228.
Variety nodiflorum Lam. Wr. 3460. See P. lancearium, p. 223. Wr. 3461. See P. chrysopsidifolium, p. 218; P. fusiforme, p. 222; P. lancearium, p. 223; P. pauciciliatum, p. 225.
113. Panicum viscidum Ell. Wr. 3467. See P. scoparium, p. 226.
114. Panicum exiguiflorum Gr. Wr. a. 1865. See p. 221.
115. Isachne leersioides Gr. Wr. 755. See p. 208. Wr. 756. See Panicum exiguiflorum, p. 221.
116. Hymenachne myurus P. B. Wr. 3469. See H. amplexicaulis, p. 212.
117. Hymenachne fluviatilis Ns. Wr. 3470. See Sacciolepis vilvoides, p. 213.
118. Hymenachne striata Gr. Wr. a. 1865 (198). See Sacciolepis striata, p. 213.
119. Setaria glauca P. B. Wr. 3472. See Chaetochloa imberbis, p. 230.
Variety imberbis R. S. Wr. a. 1865 (199). See Chaetochloa imberbis, p. 230.
Variety penicillata Gr. Wr. 3473. See Chaetochloa imberbis, p. 230.
120. Setaria onurus Gr. Wr. 3474. See Chaetochloa onurus, p. 230.
121. Setaria setosa P. B. Rug. 880; Wr. a. 1865 (287). See Chaetochloa onurus, p. 230.
122. Pennisetum setosum Rich. Wr. 3475. See p. 232.
123. Gymnothrix domingensis Spreng. Wr. 1547. See Pennisetum domingense, p. 232.
124. Cenchrus "myosuroides Kth." [No specimen found.]
125. Cenchrus echinatus L. Wr. 3476. See Cenchrus viridis, p. 231.
126. Cenchrus distichophyllus Gr. Wr. 3475. See p. 231.
127. Anthephora elegans Schreb. Wr. a. 1865 (308). See A. hermaphrodita, p. 196.
128. Echinolaena Sp. Wr. 760. See Ichnanthus wrightii, p. 229.
129. Arundinella martinicensis Tr. Wr. 3478. See p. 197.
130. Arundinella phragmitoides Gr. Wr. 3479. See A. deppeana, p. 196.
131. Arundinella cubensis Gr. Wr. 1552. See A. peruviana, p. 197.
132. Tricholaena "insularis Gr." See Valota insularis, p. 210.
133. Lappago aliena Spreng. Wr. 3489. See Nazia aliena, p. 196.
134. Manisuris granularis Sw. Wr. 1553. See Hackelochloa granularis, p. 191.
135. Rottboellia impressa Gr. Wr. a. 1865 (201). See Manisuris impressa, p. 191.
136. Andropogon secundus W. Wr. 1559. See Heteropogon contortus, p. 196.
137. Andropogon saccharoides Sw. Wr. 1556. See A. leucopogon, p. 193.
138. Andropogon "Ischaemum L. (Rich. Lind. 1818)." This specimen has not been examined.
139. Andropogon brevifolius Sw. Wr. 1558. See p. 192.
140. Andropogon tener Kth. Wr. 3482. See p. 194.
141. Andropogon gracilis Spreng. Wr. 1557, 3484. See p. 193.
142. Andropogon "scoparius Mich." Rich. See A. gracilis, p. 193.
143. Andropogon fastigiatus Sw. 3483, 3485. See p. 193.
144. Andropogon "nutans L." See Sorghastrum, p. 195. [No specimen found.]

145. Andropogon setosus Gr. Wr. a. 1865 (208). See Sorghastrum setosum, p. 195.
146. Anatherum domingense R. S. Wr. a. 1865 (202). See Andropogon leucostachys, p. 193.
147. Anatherum bicorne P. B. Wr. 770. See Andropogon bicorne, p. 192.
148. Anatherum macrurum Gr. Wr. 1555. See Andropogon glomeratus, p. 193.
149. Anatherum spathiflorum Gr. Wr. 3481. See Andropogon spathiflorus, p. 194.
150. Anatherum inerme Gr. Wr. 3480. See Andropogon spathiflorus, p. 194.
151. Sorghum halepense Pers. Wr. 3488. See Holcus halepensis, p. 195.
152. Imperata caudata Tr. Wr. 3486. See I. brasiliensis, p. 190.
153. Triscenia ovina Gr. Wr. 756. See p. 198.
154. Paratheria prostrata Gr. Wr. a. 1865 (207). See p. 232.

GRASSES OF SAUVALLE'S FLORA CUBANA.[a]

2721. Leersia monandra Sw. 731. See Homalocenchrus monandrus, p. 235.
2722. Leersia hexandra Sw. 3484. See Homalocenchrus hexandrus, p. 234.
2723. Oryza sativa L. 3838. See p. 234.
2724. Caryochloa bahiensis Steud. 3813. See Luziola bahiensis, p. 234.
2725. Uniola paniculata L. 3823. See p. 245.
2726. "Uniola virgata Gris" Rugel. See Uniola virgata, p. 245.
2727. Eragrostis excelsa Gris. 3425. See p. 244.
2728. Eragrostis nitida Chapm. 3423. See E. elliottii, p. 244.
2729. Eragrostis sudans Gris. 3422. See E. glutinosa, p. 244.
2730. Eragrostis ciliaris Link. 1550. See p. 243.
2731. Eragrostis poaeoides Beauv. 745, 3824. See E. tephrosanthes, p. 245.
2732. Eragrostis reptans Nees. 3826. See E. hypnoides, p. 244.
2733. Eragrostis bahiensis Schrad. 3424. See E. cubensis, p. 243.
2734. Eragrostis pilifera Benth. 3825. See E. cubensis, p. 243.
2735. Vilfa virginiana Beauv. 3830. See Sporobolus virginicus, p. 238.
2736. Vilfa indica Steud. 1537, 3829. See Sporobolus indicus, p. 237.
2737. Vilfa jacquemontii Kth. 3426. See Sporobolus indicus, p. 237.
2738. Vilfa arguta Nees. 3828. See Sporobolus argutus, p. 237.
2739. Vilfa purpurascens Beauv. 3427. See Sporobolus cubensis, p. 237, and S. purpurascens, p. 238.
2740. Poa airoides Kth. 3827. See Eragrostis airoides, p. 243.
2741. Arthrostylidium cubense Rupr. 3809, 3811. See p. 246.
2742. Arthrostylidium sp.? 3810. See A. urbanii, p. 246.
2743. Arthrostylidium sp.? 3808. See A. distichum, p. 246.
2744. Arthrostylidium sp. (sine numero). See A. capillifolium, p. 246.
2745. Arthrostylidium fimbriatum Gris. 1554. See p. 246.
2746. Arthrostylidium capillifolium Gris. 738. See p. 246.
2747. Gynerium saccharoides Kth. 1560, 3477. See G. sagittatum, p. 242.
2748. Leptochloa fascicularis Gray. 3812, 3822. See p. 241.
2749. Leptochloa virgata Beauv. 741, 3436. See p. 242.
2750. Leptochloa mucronata Kth. 740. See p. 241.
2751. Muhlenbergia spicata Munn. 3894. See Gramen sp., p. 246.
2752. Muhlenbergia capillaris Trin. 3836. See p. 237.
2753. Aristida scabra Kth. 3835. See p. 236.
2754. Aristida purpurascens Poir. 3432. See A. erecta, p. 236.
2755. Aristida dispersa Trin. 737. See A. mohrii, p. 236. 736. See A. curtifolia, p. 235. 3430, 3431. See A. refracta, p. 236. 3343.[b] See A. mohrii, p. 236.

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[a] See footnote, page 184.

[b] The discrepancies in numbers are doubtless due to typographical errors in Sauvalle's list.

2756. Reimaria acuta Flügge. 3437. See Reimarochloa brasiliensis, p. 198.
2757. Reinaudia filiformis Kth. 3428. See Reynaudia filiformis, p. 235.
2758. Eleusine indica Gaertn. 744. See p. 241.
2759. Dactyloctenium aegyptiacum Willd. 3831. See D. aegyptium, p. 241.
2760. Cynodon dactylon Pers. (sine numero). See Capriola dactylon, p. 238.
2761. Chloris ciliata Sw. 743. See p. 239.
2762. Chloris petraea Thunb. 3719. See p. 240.
2763. Chloris radiata Sw. 742. See p. 240.
2764. Chloris brevigluma sp. nov. 1848 p. p. See Chloris cruciata, p. 239.
2765. Chloris cruciata Sw. 1548 p. p., 1549. See C. eleusinoides, p. 239.
2766. Chloris beyrichiana Kth. 3819. See C. eleusinoides, p. 239.
2767. Chloris eleusinoides Gris. 3818. See p. 239.
2768. Bouteloua humboldtiana Gris. 739 p. p., 3815. See B. americana, p. 240.
2769. Bouteloua porphyrantha spec. nov. 739 p. p. 734, 3816. See B. americana, p. 240.
2770. Achlaena piptostachya Gris. 3487. See p. 235.
2771. Tricuspis simplex Gris. 1551. See Leptochloa spicata, p. 241.
2772. Olyra strephioides Gris. 3435. See Mniochloa strephioides, p. 233.
2773. Olyra pineti Wr. 1536. See Lithachne pineti, p. 233.
2774. Olyra pauciflora Sw. 732. See Lithachne pauciflora, p. 233.
2775. Olyra latifolia L. 746. See p. 233.
2776. Strephium? pulchellum sp. nov. 3448. See Mniochloa pulchella, p. 233.
2777. Milium lanatum R. & Sch. 3429. See Leptocoryphium lanatum, p. 207.
2778. Paspalum conjugatum Berg. 767. See p. 201.
2779. Paspalum rupestre Nees. 3445. See p. 206.
2780. Paspalum nanum Wr. 3842. See p. 204.
2781. Paspalum distichum L. 3854? See P. vaginatum, p. 206.
Variety vaginatum 1546. See P. vaginatum, p. 206, and P. distichum, p. 202.
2782. Paspalum alterniflorum Rich? 3841. See p. 200.
2783. Paspalum filiforme Sw. 769. See p. 202.
2784. Paspalum pulchellum Kth. 3439. See p. 205.
2785. Paspalum notatum Flügge. 3438. See p. 204 and P. minus, p. 203.
2786. Paspalum dissectum L. 3440. See p. 202.
2787. Paspalum setaceum Mx. 3442. See P. rigidifolium, p. 205.
2788. Paspalum caespitosum Flügge 3443, 3444. See p. 201.
2789. Paspalum leucocheilum sp. nov. See P. virgatum, p. 206.
2790. Paspalum papillosum Spr.? 3844, p. p. See p. 204.
2791. Paspalum clavuliferum sp. nov. 3444 p. p. See p. 201.
2792. Paspalum decumbens Sw. 3851. See P. pedunculatum, p. 205.
2793. Paspalum virgatum L. 3446. See p. 206. 3840. See P. millegrana, p. 203.
2794. Paspalum plicatulum Mx. 768, 3839. See p. 205. 3843. See P. elatum, p. 202.
2794. Paspalum densum Poir. 3447. See p. 202.
2795. Paspalum paniculatum L. 766. See p. 204.
2796. Paspalum rottboellioides sp. nov. 3864. See p. 205.
2797. Paspalum hemicryptum sp. nov. 3847. See p. 203.
2798. Paspalum caudicatum sp. nov. 3866. See P. nanum, p. 204.
2799. Paspalum swartzianum Flügge? 3848. See Paspalum sp., p. 206.
2800. Paspalum compressum Nees. 3849. See Axonopus compressus, p. 207.
2801. Panicum filiforme L. 1544. See Syntherisma filiformis, p. 209, and S. leucocoma, p. 209.
2802. Panicum horizontale Meyer. 764. See Syntherisma digitata, p. 209, and S. sanguinalis, p. 209. 3883. See Syntherisma sanguinalis, p. 209.
2803. Panicum sclerochloa Trin? 3859. See Mesosetum wrightii, p. 211.
2804. Panicum rottboellioides Kth. 3449. See Mesosetum rottboellioides, p. 211.

2805. Panicum platyphyllum Munro. 3441, 3867. See Brachiaria plantaginea, p. 212.
2806. Panicum paspaloides Pers. 761. See Panicum geminatum, p. 222.
2807. Panicum colonum L. 752. See Echinochloa colona, p. 213.
2808. Panicum crus-galli L. 3879. See Echinochloa walteri, p. 213.
2809. Panicum prostratum Lam. 762, 3857. See P. reptans, p. 225.
2810. Panicum grossarium L. 3869. See P. adspersum, p. 217.
2811. Panicum laxum Sw. 759, 3862. See p. 223.
2812. Panicum mayarense sp. nov. 3468 p. p. See Ichnanthus mayarensis, p. 228.
2813. Panicum amphistemon sp. nov. 3464. See Alloteropsis amphistemon, p. 211.
2814. Panicum distantiflorum Rich. 3452. See p. 220.
2815. Panicum diffusum Sw. 1540, 3877. See p. 220.
2816. Panicum fuscum Sw. 754. See P. fasciculatum, p. 221.
2817. Panicum molle Sw. 1545. See P. numidianum, p. 224.
2818. Panicum oryzoides Sw. 3466. See P. zizanioides, p. 228.
2819. Panicum stenodes Gris. 3860. See P. chloroticum, p. 218. 3870. See P. tenerum, p. 227. 3871. See p. 227.
2820. Panicum proliferum Lam. 3456, 3861. See P. chloroticum, p. 218.
2821. Panicum durum Gris. 1539, 3868. See Alloteropsis dura, p. 211.
2822. Panicum distichum Lam. 3451. See P. pilosum, p. 225.
2823. Panicum agrostoides Muhl. 3862. See P. condensum, p. 219.
2824. Panicum maximum Jacq. See p. 224.
2825. Panicum virgatum L. 3873. See P. virgatum cubense, p. 227.
2826. Panicum altissimum Mey. 3872. See P. megiston, p. 224.
2827. Panicum rudgei R. S.? 758. See P. hirtivaginum, p. 223.
2828. Panicum divaricatum L. 747, 748. See p. 220. 3465. See P. rugelii, p. 226.
2829. Panicum sloanei Gris. 3878. See p. 226.
2830. Panicum martinicense Gris. 749. See P. compactum, p. 219. 3457. See P. grisebachii, p. 222.
2831. Panicum lasianthum Trin. 3455, 3855. See P. sellovii, p. 226.
2832. Panicum glutinosum Sw. 757. See p. 222.
2833. Panicum cayennense Lam? (Sine numero). See p. 218.
2834. Panicum dichotomum L. 3460. See P. lancearium, p. 223. 3461. See P. chrysopsidifolium, p. 218, P. fusiforme, p. 222, P. lancearium, p. 223, and P. pauciciliatum, p. 225. 3462. See P. erectifolium, p. 221. 3463. See P. leucothrix, p. 224, P. caerulescens, p. 219, P. tenue, p. 227, and P. wrightianum, p. 228. 3874. See P. acuminatum, p. 217. 3875. See P. polycaulon, p. 225. P. strigosum, p. 227. 3876. See P. pauciciliatum, p. 225. 3453. See P. fusiforme, p. 222, P. chrysopsidifolium, p. 218, and P. neuranthum, p. 224. 3454. See P. chrysopsidifolium, p. 218, and P. fusiforme, p. 222.
2835. Panicum brevifolium L. 1538. See P. trichoides, p. 227.
2836. Panicum cyanescens L. 3458. See P. parvifolium, p. 225. 3459. See P. nitidum, p. 224.
2837. Panicum microcarpum Muhl. 753. See P. trichanthum, p. 227.
2838. Panicum viscidum Ell. 3467. See P. scoparium, p. 226.
2839. Panicum pallens Sw. 750. See Ichnanthus pallens, p. 228. 3882. See Ichnanthus nemorosus, p. 228.
2840. Panicum nemorosum Sw. 3858, 3881. See Ichnanthus nemorosus, p. 228.
2841. Panicum stoloniferum Poir? 3880. See Ichnanthus wrightii, p. 229.
2842. Panicum amplexicaule Rudge. 3863. See Hymenachne auriculata, p. 212.
2843. Panicum gibbum Ell. 3885. See Sacciolepis striata, p. 213.
2844. Panicum vilvoides Trin. 3470. See Sacciolepis vilvoides, p. 213.
2845. Hymenachne myurus Beauv. 3469. See H. amplexicaulis, p. 212.
2846. Eriochloa punctata Hamilt. 1542. See p. 208.
2847. Eriochloa annulata Kth? 3886. See Eriochloa ramosa, p. 208.

2848. Chamaerhaphis parvigluma Munro. 3909. See Paratheria prostrata, p. 232.
2849. "Orthopogon hirtellus R. Br." See Oplismenus hirtellus, p. 229.
2850. Orthopogon setarius Spreng. 1593. See Oplismenus hirtellus, p. 229.
2851. Orthopogon loliaceus Spreng. 751. See Oplismenus hirtellus, p. 229.
2852. Setaria glauca Beauv. 3888. See Chaetochloa imberbis penicillata, p. 230.
2853. Setaria setosa Beauv. 3474, 3487. See Chaetochloa onurus, p. 230.
2854. Pennisetum setosum Rich. 3471. See p. 232.
2855. Gymnothrix domingensis Spreng. 1547. See Pennisetum domingense, p. 232.
2856. Stenotaphrum americanum Schrank. 3490. See S. secundum, p. 232.
2857. Isachne leersioides Gris. 1547. See p. 208.
2858. Cenchrus viridis Spreng. 3889. See p. 231.
2859. Cenchrus tribuloides L. 3476. See Cenchrus carolinianus, p. 231 and C. viridis, p. 231.
2860. Cenchrus distichophyllus Gris. 3475. See p. 231.
2861. Anthephora elegans Schreb. 3870. See A. hermaphrodita, p. 196.
2862. Lappago racemosa Willd. 3489. See Nazia aliena, p. 196.
2863. Triscenia ovina Gris. 756. See p. 198.
2864. Arundinella brasiliensis Radd. 1552. See A. peruviana, p. 197.
2865. Arundinella phragmatoides Gris. 3479. See A. deppeana, p. 196.
2866. Arundinella martinicensis Gris. 3478. See p. 197.
2867. Tricholena insularis Gris. 1541. See Valota insularis, p. 210.
2868. Rottboellia impressa Gris. 3904. See Manisuris impressa, p. 191.
2869. Rottboellia filifolia. Sp. nov. 3905. See Manisuris loricata, p. 191.
2870. Manisuris granularis Sw. 1553. See Hackelochloa granularis, p. 191.
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2872. Andropogon saccharoides Sw. 1556. See A. leucopogon, p. 193.
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2876. Andropogon leucostachyus Kth. 3900. See p. 193.
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2880. Andropogon bicornis L. 770. See p. 192.
2881. Andropogon tener Kth. 1558? See p. 194, and A. brevifolius, p. 192. 3482. See p. 194.
2882. Andropogon brevifolius Sw. 1558. See p. 192.
2883. Andropogon gracilis Spreng. 3480. See p. 193.
2884. Andropogon sp. 3898. See A. cubensis, p. 192.
2885. Andropogon wrightii Munro, 293, 263, 3895. See Rhaphis pauciflora, p. 195.
2886. Andropogon fastigiatus Sw. 3483. See p. 193.
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2888. Andropogon sp. 3892, 3893. See Trachypogon filifolius, p. 191.
2889. Andropogon sp. 3891. See A. semiberbis, p. 194.
2890. Imperata caudata Trin. 3486. See I. brasiliensis, p. 190.
2891. Perotis? cubana spec. nov. 735. See Chaetium cubanum, p. 232.

GRASSES COLLECTED IN CUBA BY WRIGHT, ARRANGED BY NUMBERS.

731. Homalocenchrus monandrus.
732. Lithachne pauciflora.
733. Pharus glaber.
734. Bouteloua americana.
735. Chaetium cubanum.
736. Aristida curtifolia.
737. Aristida mohrii.
738. Arthrostylidium capillifolium.
739. Bouteloua americana.
740. Leptochloa mucronata.[a]
Leptochloa virgata.
741. Leptochloa mucronata.
Leptochloa virgata.
742. Aristida mohrii.
Chloris radiata.
743. Chloris ciliata.
744. Eleusine indica.
745. Eragrostis tephrosanthes.
746. Olrya latifolia.
747. Panicum divaricatum.
748. Panicum divaricatum.
749. Panicum compactum.
750. Ichnanthus pallens.
751. Oplismenus hirtellus.
752. Echinochloa colona.
753. Panicum tricanthum.
754. Panicum fasciculatum.
755. Panicum exiguiflorum.
Isachne leersioides.
756. Triscenia ovina.
Panicum exiguiflorum.
757. Panicum glutinosum.
758. Panicum hirtivaginum.
759. Panicum laxum.
760. Ichnanthus wrightii.
761. Panicum geminatum.
762. Panicum reptans.
763. Panicum reptans.
Axonopus compressus.
764. Syntherisma digitata.
Syntherisma sanguinalis.
765. Axonopus compressus.
766. Paspalum paniculatum.
767. Paspalum conjugatum.
768. Paspalum plicatulum.
769. Paspalum filiforme.
770. Andropogon bicornis.
1536. Lithachne pineti.
1537. Sporobolus indicus.
1538. Panicum trichoides.
1539. Alloteropsis dura.
1540. Panicum diffusum.
1541. Valota insularis.
1542. Eriochloa punctata.
1543. Oplismenus hirtellus.
1544. Syntherisma filiformis.
Syntherisma leucocoma.
1545. Panicum numidianum.
1546. Paspalum distichum.
Paspalum vaginatum.
1547. Isachne leersioides.
Pennisetum domingense.
1548. Chloris cruciata.
Chloris eleusinoides.
1549. Chloris cruciata.
Chloris eleusinoides.
1550. Eragrostis ciliata.
1551. Leptochloa spicata.
1552. Arundinella peruviana.
1553. Hackelochloa granularis.
1554. Arthrostylidium fimbriatum.
1555. Andropogon bicornis.
Andropogon glomeratus.
1556. Andropogon leucopogon.
1557. Andropogon gracilis.
1558. Andropogon brevifolius.
Andropogon tener.
1559. Alloteropsis dura.
Heteropogon contortus.
1560. Gynerium sagittatum.
1593. Oplismenus hirtellus.
1848. Chloris cruciata.
2823. Uniola paniculata.
2829. Sporobolus indicus.
2830. Sporobolus virginicus.
3422. Eragrostis glutinosa.
Sporobolus cubensis.
3423. Eragrostis elliottii.
3424. Eragrostis cubensis.
3425. Eragrostis excelsa.
3426. Sporobolus indicus.
3427. Sporobolus cubensis.
Sporobolus purpurascens.
3428. Reynaudia filiformis.
3429. Leptocoryphium lanatum.
3430. Aristida refracta.
3431. Aristida refracta.
3432. Aristida erecta.
3433. Aristida mohrii.
3434. Homalocenchrus hexandrus.

[a] Two or more species when here listed under one number were all distributed under this number by Wright.

3435. Mniochloa strephioides.
3436. Leptochloa virgata.
3437. Reimarochloa brasiliensis.
3438. Paspalum notatum.
Paspalum minus.
3439. Paspalum pulchellum.
3440. Paspalum dissectum.
3441. Brachiaria plantaginea.
3442. Paspalum rigidifolium.
3443. Paspalum arenarium.
Paspalum caespitosum.
3444. Paspalum caespitosum.
Paspalum clavuliferum.
Paspalum papillosum.
Paspalum rupestre.
3445. Paspalum rupestre.
3446. Paspalum virgatum.
Paspalum virgatum schreberianum.
3447. Paspalum densum.
3448. Mniochloa pulchella.
3449. Mesosetum rottboellioides.
3450. Panicum exiguiflorum.
3451. Panicum pilosum.
3452. Panicum distantiflorum.
3453. Panicum chrysopsidifolium.
Panicum fusiforme.
Panicum neuranthum.
3454. Panicum chrysopsidifolium.
Panicum fusiforme.
3455. Panicum sellovii.
3456. Panicum chloroticum.
3457. Panicum grisebachii.
Panicum pilosum.
3458. Panicum parvifolium.
3459. Panicum nitidum.
3460. Panicum lancearium.
3461. Panicum chrysopsidifolium.
Panicum fusiforme.
Panicum lancearium.
Panicum pauciciliatum.
3462. Paspalum densum.
Panicum erectifolium.
Panicum sellovii.
3463. Panicum caerulescens.
Panicum leucothrix.
Panicum tenue.
Panicum wrightianum.
3464. Alloteropsis amphistemon.
3465. Panicum rugelii.
3466. Panicum zizanioides.
3467. Panicum scoparium.
3468. Ichnanthus mayarensis.
3469. Hymenachne amplexicaulis.
3470. Sacciolepis vilvoides.
3471. Pennisetum setosum.
3472. Chaetochloa imberbis.
3473. Chaetochloa imberbis.
3474. Chaetochloa onurus.
3475. Cenchrus distichophyllus.
Pennisetum setosum.
3476. Cenchrus viridis.
Cenchrus carolinianus.
3477. Gynerium sagittatum.
3478. Arundinella martinicensis.
3479. Arundinella deppeana.
3480. Andropogon gracilis.
Andropogon spathiflorus.
3481. Andropogon spathiflorus.
3482. Andropogon tener.
3483. Andropogon fastigiatus.
3484. Andropogon gracilis.
3485. Andropogon fastigiatus.
3486. Imperata brasiliensis.
3487. Chaetochloa onurus.
Achlaena piptostachya.
3488. Holcus halepensis.
3489. Nazia aliena.
3490. Stenotaphrum secundum.
3719. Chloris petraea.
3808. Arthrostylidium distichum.
3809. Arthrostylidium cubense.
3810. Arthrostylidium urbanii.
3811. Arthrostylidium cubense.
3812. Leptochloa fascicularis.
3813. Luziola bahiensis.
3814. Capriola dactylon.
3815. Bouteloua americana.
3816. Bouteloua americana.
3817. Chloris petraea.
3818. Chloris eleusinoides.
3819. Chloris eleusinoides.
3821. Dactyloctenium aegyptium.
3822. Leptochloa fascicularis.
3823. Uniola paniculata.
3825. Eragrostis cubensis.
3826. Eragrostis hypnoides.
3827. Eragrostis airoides.
3828. Sporobolus argutus.
3829. Sporobolus indicus.
3830. Sporobolus virginicus.
3831. Aristida refracta.
Dactyloctenium aegyptium.
3832. Aristida refracta.
3833. Aristida refracta.
3834. Aristida refracta.
3835. Aristida scabra.
3836. Muhlenbergia capillaris.
3837. Homalocenchrus hexandrus.

3838. Oryza sativa.
3839. Paspalum plicatulum.
Paspalum pulchellum.
3840. Paspalum millegrana.
3841. Paspalum alterniflorum.
3842. Paspalum nanum.
3843. Paspalum elatum.
3844. Paspalum papillosum.
3845. Paspalum propinquum.
3846. Paspalum glabrum.
3847. Paspalum hemicryptum.
3848. Paspalum sp.
3849. Axonopus compressus.
3850. Axonopus compressus.
3851. Paspalum pedunculatum.
3852. Panicum diffusum.
3853. Brachiaria plantaginea.
3854. Paspalum vaginatum.
Reimarochloa oligostachya.
3855. Panicum sellovii.
3856. Panicum laxum.
3857. Panicum reptans.
3858. Ichnanthus nemorosus.
3859. Mesosetum wrightii.
3860. Panicum chloroticum.
Panicum diffusum.
Panicum hirtivaginum.
Panicum tenerum.
3861. Panicum chloroticum.
3862. Panicum condensum.
Panicum laxum.
3863. Hymenachne auriculata.
Panicum condensum.
Panicum laxum.
3864. Paspalum rottboellioides.
3865. Panicum cayennense.
3866. Paspalum nanum.
3867. Brachiaria plantaginea.
3868. Alloteropsis dura.
3869. Panicum adspersum.
3870. Anthephora hermaphrodita.
3870. Panicum distantiflorum.
Panicum tenerum.
3871. Panicum stenodes.
3872. Panicum megiston.
3873. Panicum virgatum cubense.
3874. Panicum acuminatum.
3875. Panicum polycaulon.
Panicum strigosum.
3876. Panicum pauciciliatum.
3877. Panicum diffusum.
Panicum exiguiflorum.
3878. Panicum sloanei.
3879. Echinochloa walteri.
3880. Ichnanthus wrightii.
3881. Ichnanthus nemorosus.
3882. Ichnanthus nemorosus.
3883. Syntherisma sanguinalis
3884. Syntherisma villosa.
3885. Sacciolepis striata.
3886. Eriochloa ramosa.
3887. Chaetochloa onurus.
3888. Chaetochloa imberbis penicillata.
3889. Cenchrus viridis.
3890. Anthephora hermaphrodita.
3891. Andropogon semiberbis.
3892. Trachypogon filifolius.
3893. Trachypogon filifolius.
3894. Unidentified.
3895. Rhaphis pauciflora.
3896. Sorghastrum francavillanum.
3897. Sorghastrum setosum.
3898. Andropogon cubensis.
3899. Andropogon nashianus.
3900. Andropogon leucostachys.
3901. Andropogon virginicus.
3902. Andropogon bicornis.
3903. Erianthus saccharoides.
3904. Manisuris impressa.
3905. Manisuris loricata.
3906. Paratheria prostrata.
3909. Paratheria prostrata.

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ADDITIONS TO THE GRASSES OF CUBA

Since the publication of the *Catalogue of the grasses of Cuba*,[3] several additional species of grasses have been contributed to the National Herbarium by Brother LEÓN of the Colegio de la Salle, Habana. The following is a list of these:

MANISURIS EXALTATA (L. f.) Kuntze, Rev. Gen. Pl. **2**:779. 1891.

Stegosia exaltata Nash, N. Amer. Fl. **17**:84. 1909.

This species is retained provisionally in *Manisuris* until the genera of Andropogoneae are more carefully examined.

Sancti Spiritus, *León* 847.

ANDROPOGON SQUARROSUS L. f. Suppl. 433. 1781.

Habana, *León* 1581. Introduced.

ANDROPOGON CARICOSUS L. Sp. Pl. ed. 2. **2**:1480. 1763.

Guanabacoa, *León* 2013. Introduced.

Sorghastrum agrostoides (Speg.).

Andropogon agrostoides Speg. Pl. Nov. Nonnul. Amer. Austr. Dec. **2**:27. 1883.

Sancti Spiritus, *León* 895.

PASPALUM BLEPHAROPHYLLUM Nash, in Small Fl. Southeast. U.S. 71. 1903.

Marianao, *León*, 779.

PASPALUM HELLERI Nash, Bull. Torrey Club **30**:376. 1903.

Santiago de Cuba, *León* 951.

PASPALUM MONOSTACHYUM (H. B. K.) Vasey, in Chapm. Fl. South. U.S. ed. 2. 665. 1889.

Zaza de Tunas, Santa Clara, *León* 947. The spikelets are smaller than in the typical form.

Paspalum Leoninum Chase, sp. nov.—A low tufted perennial, with narrow leaves mostly crowded at the base, slender nearly naked culms and solitary usually purplish racemes. Culms 15–35 cm. high, very slender, wiry, compressed, ascending or spreading and more or less sinuous, glabrous, the nodes ascending-pubescent; lower sheaths overlapping and keeled, glabrous or sparsely pubescent on the scarious margin and with a few stiff hairs on the auricles,

[3] HITCHCOCK, A. S., Contr. Nat. Herb. **12**:183–258. 1909.

usually but a single leaf about midway on the culm, the sheath with a few scattered long hairs or glabrous; ligule membranaceous, about 0.5 mm. long; blades flat or somewhat involute from a folded base narrower than the summit of the sheath, 3–7 cm. long, 1–2 mm. wide, more or less curled, glabrous on both surfaces or minutely puberulent on the upper, a few stiff hairs on the margin and rarely on the upper surface, the blade of the uppermost leaf reduced to a mere tip; raceme 2–3.5 cm. long, slightly curved, a few long hairs at the base; spikelets solitary, on very short, flattened, scabrous pedicels, closely imbricated, almost concavo-convex, 1.3–1.5 mm. long, about 0.7 mm. wide, oval, glabrous; second glume 3-nerved, the sterile lemma with a nerve near either margin, the midnerve suppressed or apparent only at the summit; fruit nearly as large as the spikelet.

Type U.S. National Herbarium no. 618,754; collected August 30, 1909, on "Obispo hill, near Sancti Spiritus," by Brother *León* (no. 950).

This species is most nearly related to *Paspalum rupestre* Trin., from single-spiked specimens of which it may be distinguished by the more delicate culms and the more closely imbricated, glabrous spikelets, the second glume with the midnerve suppressed.

Paspalum Leoninum is named in honor of Brother León, of the Colegio de la Salle, Vedado, Habana, whose collections have added greatly to our knowledge of the grasses of Cuba.

A second collection of this species was made on the Jata Hills, Guanabacoa, September 12, 1909, *León* 949.

Cenchrus myosuroides H. B. K. Nov. Gen. & Sp. 1:115. 1816.

Santiago de Cuba, *León* 835.

Gouinia polygama Fourn. Mex. Pl. 2:103. 1886.

Cojimar, *León* 2014.

Arundo Donax L. Sp. Pl. 81. 1753.

Marianao, *León* 1523. Escaped from cultivation.

Lolium temulentum arvense (With.) Bab. Man. Brit. Bot. 377. 1843.

Habana, *León* 1583. Introduced.

It may be well to record here certain changes in the names of a few species of *Panicum* listed in the *Catalogue*, as shown by the recent revision of this group.[4]

Panicum aquaticum Poir. This is a synonym of *P. dichotomiflorum* Michx. The Cuban species is *P. elephantipes* Nees.

Panicum compactum Sw. = **Lasiacis compacta** (Sw.).

[4] Hitchcock and Chase, Contr. Nat. Herb. 15:1–396. 1910.

Panicum distantiflorum Rich. To this species was referred *Panicum utowanaeum* Scribn. (*P. Sintenisii* Nash), which proves to be a distinct species. It is represented by two specimens from Triscornia, near Habana, *Hitchcock* 141 and *Tracy* 9089.

Panicum divaricatum L. = LASIACIS DIVARICATA (L.) Hitchc.

Panicum Grisebachii Nash = **Lasiacis Grisebachii** (Nash).

Panicum hirtivaginum Hitchc. This species appears to be the same as *P. Ghiesbreghtii* Fourn. of Mexico.

Panicum laxum Sw. To this was referred *P. polygonatum* Schrad. which, however, proves to be distinct, and is easily recognized by its pubescent nodes, and by the lack of the swollen sterile palea which characterizes *P. laxum* and *P. pilosum.*

Panicum numidianum Lam. This species appears to be confined to the North African area and, though not well known, is sufficiently distinct from *P. barbinode* Trin. of Cuba and tropical America.

Panicum Rugellii Griseb. = **Lasiacis Rugellii** (Griseb.).

Panicum Sellovii Nees. An earlier name is *P. millegrana* Poir.

Panicum Sloanei Griseb. = **Lasiacis Sloanei** (Griseb.).

Panicum Swartzianum Hitchc. = **Lasiacis Swartziana** (Hitchc.).

To these may be added the following two corrections in genera allied to *Panicum*:

Mesosetum rottboellioides (H. B. K.) Hitchc. A comparison of the type specimens shows that the Cuban species is **Mesosetum loliiforme** (Hochst.) Chase (*Panicum loliiforme* Hochst.[5]).

Hymenachne auriculata (Willd.) Chase. The specimen mentioned, Wright 3863 in part, is *H. patula* Fourn.[6]—A. S. HITCHCOCK, *U.S. Department of Agriculture, Washington, D.C.*

[5] Steud. Syn. Pl. Glum. 1:56. 1854.

[6] Mex. Pl. 2:37. 1886.

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